A Review of the 1983 Commercial Salmon Fisheries on the Queen Charlotte Islands (Areas 1, 2W and 2E): Catch, Escapement and Management Strategies

Lynda Orman and P.E. Sprout

Department of Fisheries and Oceans
Prince Rupert, B.C. V8J 1G8

July 1984

Canadian Manuscript Report of Fisheries and Aquatic Sciences No. 1764

Canadian Manuscript Report of Fisheries and Aquatic Sciences

Manuscript reports contain scientific and technical information that contributes to existing knowledge but which deals with national or regional problems. Distribution is restricted to institutions or individuals located in particular regions of Canada. However, no restriction is placed on subject matter, and the series reflects the broad interests and policies of the Department of Fisheries and Oceans, namely, fisheries and aquatic sciences.

Manuscript reports may be cited as full publications. The correct citation appears above the abstract of each report. Each report is abstracted in *Aquatic Sciences and Fisheries Abstracts* and indexed in the Department's annual index to scientific and technical publications.

Numbers 1 900 in this series were issued a. Manuscript Reports (Biological Series) of the Biological Board of Canada, and subsequent to 1937 when the name of the Board was changed by Act of Parliament, as Manuscript Reports (Biological Series) of the Fisheries Research Board of Canada. Numbers 901 1425 were issued as Manuscript Reports of the Fisheries Research Board of Canada. Numbers 1426 1550 were issued as Department of Fisheries and the Environment, Fisheries and Marine Service Manuscript Reports. The current series name was changed with report number 1551.

Manuscript reports are produced regionally but are numbered nationally. Requests for individual reports will be filled by the issuing establishment listed on the front cover and title page. Out-of-stock reports will be supplied for a fee by commercial agents.

Rapport manuscrit canadien des sciences halieutiques et aquatiques

Les rapports manuscrits contiennent des renseignements scientifiques et techniques qui constituent une contribution aux connaissances actuelles, mais qui traitent de problèmes nationaux ou régionaux. La distribution en est limitée aux organismes et aux personnes de régions particulières du Canada. Il n'y a aucune restriction quant au sujet; de fait, la série reflète la vaste gamme des intérêts et des politiques du ministère des Pêches et des Océans, c'est-à-dire les sciences halieutiques et aquatiques.

Les rapports manuscrits peuvent être cités comme des publications complètes. Le titre exact paraît au-dessus du résumé de chaque rapport. Les rapports manuscrits sont résumés dans la revue *Résumés des sciences aquatiques et halieutiques*, et ils sont classés dans l'index annuel des publications scientifiques et techniques du Ministère.

Les numéros 1 à 900 de cette série ont été publiés à titre de manuscrits (série biologique) de l'Office de biologie du Canada, et après le changement de la désignation de cet organisme par décret du Parlement, en 1937, ont été classés comme manuscrits (série biologique) de l'Office des recherches sur les pêcheries du Canada. Les numéros 901 à 1425 ont été publiés à titre de rapports manuscrits de l'Office des recherches sur les pêcheries du Canada. Les numéros 1426 à 1550 sont parus à titre de rapports manuscrits du Service des pêches et de la mer, ministère des Pêches et de l'Environnement. Le nom actuel de la série a été établi lors de la parution du numéro 1551.

Les rapports manuscrits sont produits à l'échelon régional, mais numérotés à l'échelon national. Les demandes de rapports seront satisfaites par l'établissement auteur dont le nom figure sur la couverture et la page du titre. Les rapports épuisés seront fournis contre rétribution par des agents commerciaux.

Canadian Manuscript Report of
Fisheries and Aquatic Sciences 1764

July 1984

A REVIEW OF THE 1983 COMMERCIAL SALMON FISHERIES ON THE QUEEN CHARLOTTE ISLANDS (AREAS 1, 2W AND 2E): CATCH, ESCAPEMENT AND MANAGEMENT STRATEGIES

by

Lynda Orman and P.E. Sprout

Department of Fisheries and Oceans
Prince Rupert, B.C.
V8J 1G8

(c) Minister of Supply and Services Canada 1984

Cat. No. Fs 97-4/1764 ISSN 0706-6473

Correct citation for this publication:

Orman, Lynda and P.E. Sprout. 1984. A review of the 1983 commercial salmon fisheries on the Queen Charlotte Islands (Area 1, 2W and 2E): catch, escapement and management strategies. Can. MS Rep. Fish. Aquat. Sci. 1764: 34 p.

CONTENTS

List of Figures iii
List of Tables iii
List of Appendices iv
Abstract/Résumé v
Introduction 1
Area description 1
Management procedures 4
Data sources 4
Commercial catches 5
Charter vessels 5
Indian Food Fisheries 5
Escapement 5
Area 1 6
1983 Pre-season fishing pattern 6
1983 Weekly fishing summary 6
Escapements 13
Review of past and present fisheries 13
Assessment of 1983 salmon fishery, Area 1 15
Area 2W 16
1983 Pre-season fishing pattern 16
1983 Weekly fishing summary. 16
Escapements. 21
Review of past and present fisheries 21
Assessment of 1983 salmon fishery, Area 2W 24
Area 2E 25
1983 Pre-season fishing pattern 25
1983 Weekly fishing summary 25
Escapements 25
Troll fishery, North Coast 30
Acknowledgements 31
References 31

LIST OF FIGURES

Figure
1. Geographic locations of the Queen Charlotte Islands 2
2. Location of Statistical Areas in northern B.C. 3
3. Area 1, 2W and 2E management units, Queen Charlotte Islands 7

LIST OF TABLES

Table
1. Weekly Area 1 fishing season: pre-season plans, in-season management and rationale for management, 1983 8
2. Daily Area 1 seine and gillnet hail catches by species, number of fishing days, and gear, 1983 9

LIST OF TABLES (cont'd)

Table
3. Annual commercial salmon catches by species and gear, Area 1, 1954-1983 10
4. Annual salmon fishing effort by gear, Area 1, 1954-1983 12
5. Annual spawning escapements for sockeye, chinook, coho, chum and pink, Area 1, 1947-1983 14
6. Weekly Area 2W fishing season: pre-season plans, in-season management and rationale for management, 1983 17
7. Daily Area 2W seine and gillnet hail catches by species, number of fishing days, and gear, 1983 18
8. Annual commercial salmon catches by species and gear, Area 2W, 1954-1983 19
9. Annual salmon fishing effort by gear, Area 2W, 1954-1983 22
10. Annual spawning escapements for sockeye, coho, chum and pink, Area 2W, 1947-1983 23
11. Annual commercial salmon catches by species and gear, Area 2E, 1954-1983 26
12. Annual salmon fishing effort by gear, Area 2E, 1954-1983 28
13. Annual spawning escapements for sockeye, coho, chum and pink, Area 2E, 1947-1983. 29

LIST OF APPENDICES

Appendix
1. Salmon expectations and fishing plans, Area 1, north coast Queen Charlotte Islands, 1983 32
2. Salmon expectations and fishing plans, Area 2W, west coast Queen Charlotte Islands, 1983 33
3. Salmon expectations and fishing plans, Area 2E, east coast Queen Charlotte Islands, 1983 34

ABSTRACT

Orman, Lynda and P.E. Sprout. 1984. A review of the 1983 commercial salmon fisheries on the Queen Charlotte Islands (Areas 1, 2W and 2E): catch, escapement and management strategies. Can. MS Rep. Fish. Aquat. Sci. 1764: 34 p.

In 1983, returns of salmon to the Queen Charlotte Islands (Statistical Areas 1, 2W and 2E) were low and no directed fisheries on local stocks occurred. Fisheries in Areas 1 and 2W were on passing stocks and catches were most likely composed, in varying proportions, of stocks originating from the Nass and Skeena rivers, southeast Alaska and the Fraser River. In Area 1, the net catch was less than average for all species while in Area 2W, the pink and sockeye net catches were the highest on record. Unusually warm water conditions may have influenced salmon migration routes and timing and thus affected catch distributions.

This report reviews management actions and documents how management decisions were made for commercial fisheries in Areas 1, 2W and 2E, what information was used, how it was interpreted, and what the results were in terms of catch and escapement.

Key words: Queen Charlotte Islands, 1983 commercial salmon net fisheries, management strategies

RÉSUMÉ

Orman, Lynda and P.E. Sprout. 1984. A review of the 1983 commercial salmon fisheries on the Queen Charlotte Islands (Areas 1, 2W and 2E): catch, escapement and management strategies. Can. MS Rep. Fish. Aquat. Sci. 1764: 34 p.

En 1983, les remontées de saumon vers les Îles Reine-Charlotte (zones statistiques 1, 2W et 2E) ont été faibles et aucune pêche sélective des stocks locaux n'a eu lieu. Dans les zones 1 et 2W, la pêche a été dirigée vers les stocks de passage et les prises étaient composées, en proportions variables, de stocks provenant des rivières Nass et Skeena, du sud-est de l'Alaska et du fleuve Fraser. Dans la zone 1, les prises au filet ont été inférieures à la moyenne pour toutes les espèces tandis que, dans la zone 2W, les prises de saumons rose et rouge battaient tous les records. L'eau exceptionnellement chaude peut avoir influer sur les schèmes migratoires du saumon et le moment de la migration, et donc sur les répartitions des prises.

Le présent rapport porte sur les mesures gestionnelles et explique comment les décisions ont été prises pour ce qui est de la pêche commerciale dans les zones 1, 2W et 2E, quelles données ont ete utilisées, comment elles ont été interpretées et quels résultats ont été obtenus en termes de prises et de remontées.

Mots-clés: Îles Reine-Charlotte, pêches commerciales du saumon au filet en 1983, stratégies gestionnelles

INTRODUCTION

Since the early 1900's, salmon fisheries around the Queen Charlotte Islands have been providing a variable catch contribution to the total B.C. salmon harvest. Stock management systems have been evolving very slowly over this period, with little or no documentation of management strategies and their effect on salmon catches.

Recent studies stressed the importance of management decision records and noted that their absence makes it difficult to appraise and evaluate management results (Pearse 1982). Others have argued that learning from fisheries management actions is impeded without a record of strategies and may increase the risk that past incorrect management actions will be repeated (Anon. 1982). As well, the lack of a written record limits transfer of knowledge among fisheries managers and makes it difficult to benefit from past experience in a systematic manner.

The purpose of this report is to review strategies used to manage the commercial salmon net fisheries in the Queen Charlotte Islands area (Statistical Areas 1, 2W and 2E) in 1983. It documents how management decisions were made, what information was used to base the decisions on, how the information was interpreted, and what the results were in terms of catch and escapement.

AREA DESCRIPTION

The Queen Charlotte Islands lie approximately 100 km off the west coast of Canada in northern British Columbia and cover a land mass of 6900 km^2 (Fig. 1). The North American continental shelf falls steeply on the westward side of the islands, while a submerged plateau and former land mass spreads to the east in the shallower waters of Hecate Strait. North and southward migrations of salmon and other marine species occur in the waters surrounding these islands. The islands are comprised of two main land masses: Graham Island to the north and Moresby Island to the south (Fig. 1), which bear approximately 200 salmon spawning streams. Numerous smaller islands are scattered along the shores of the two main islands, particularly to the south-east. The highly indented coastline contains a number of productive estuaries with good rearing habitat for salmonids as well as other marine species, and provides sheltered access to the fishing fleet.

The waters surrounding the Queen Charlotte Islands comprise Statistical Areas 1, 2 West and 2 East (Fig. 2) of the Department of Fisheries and Oceans (DFO) fisheries operations. A fisheries district office is located in Queen Charlotte city. In addition, sub-district offices are located in Masset and Sandspit where fishery officers provide protection and assessment of the resource on a more local scale. A sub-regional office located in Prince Rupert (Fig. 1) houses additional northern operations staff, including management biologists and a northern director.

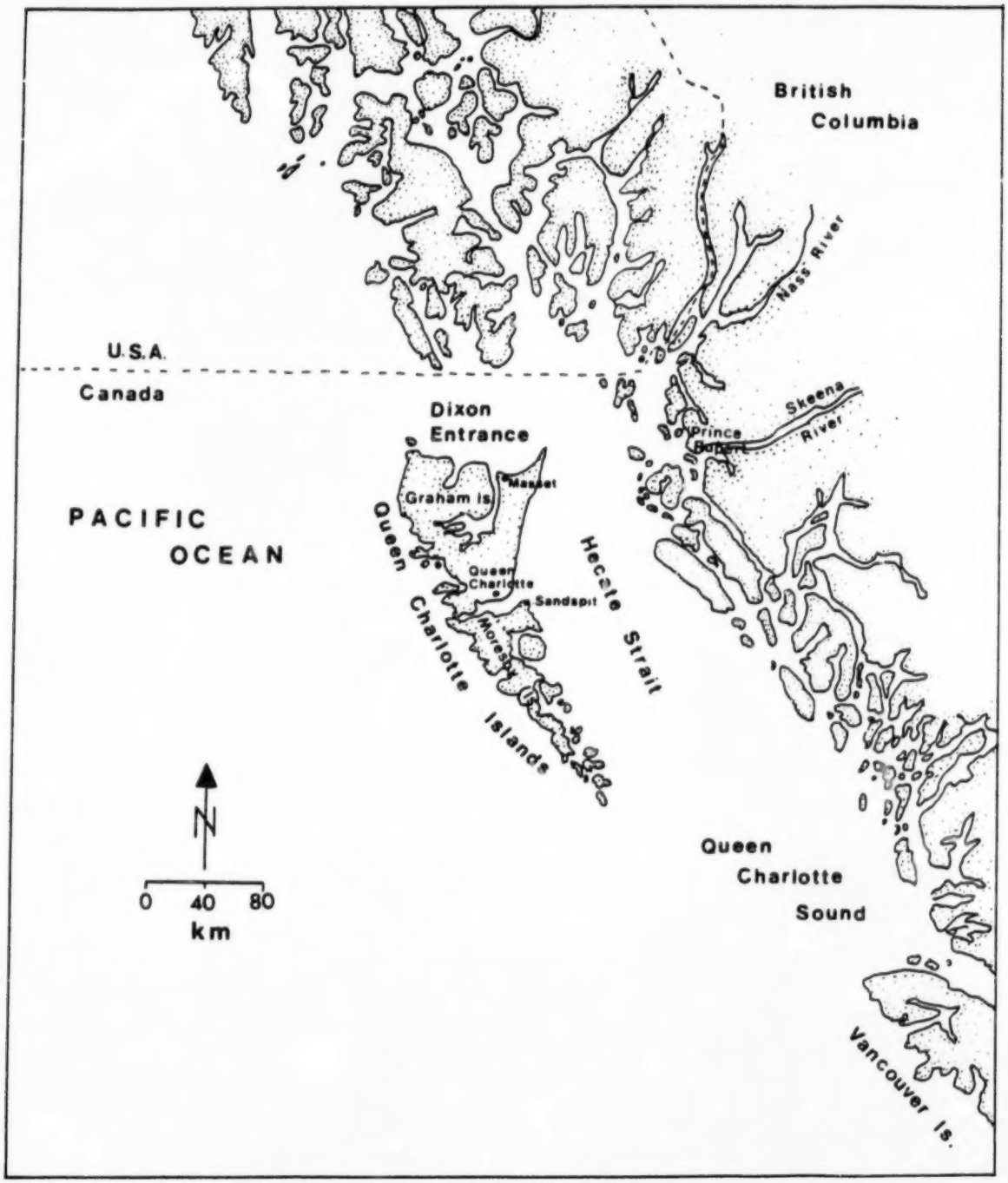

Fig. 1. Geographic location of the Queen Charlotte Islands.

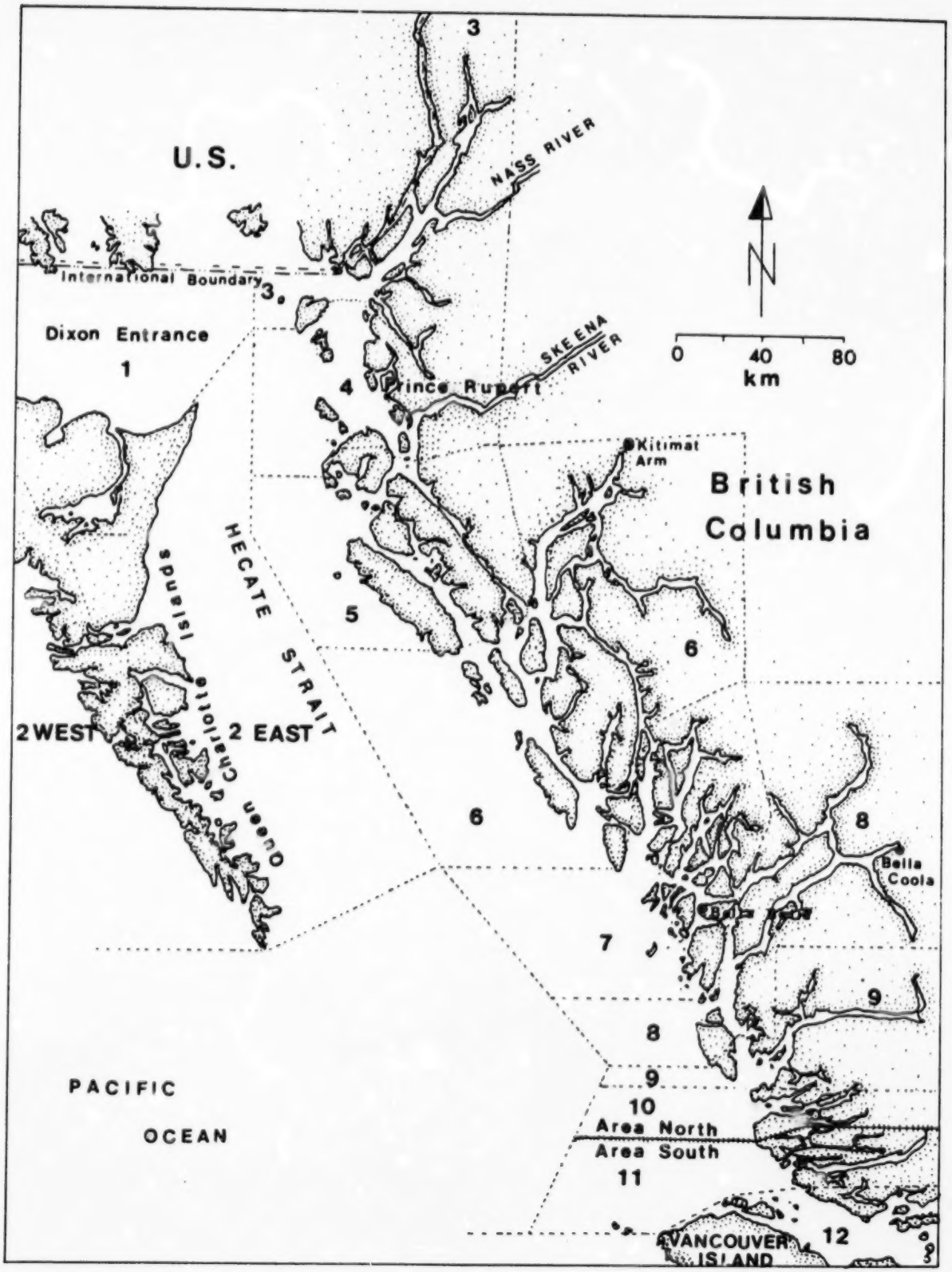

Fig. 2. Location of Statistical Areas in northern B.C.

MANAGEMENT PROCEDURES

A general account of procedures followed by the North Coast Operations Branch of DFO in preparing pre-season fishing plans and undertaking in-season management is provided in the following section.

Pre-season stock expectations and fishing plans are developed by the local fishery officer and area biologist and then reviewed with senior managers. Forecasts of returning stock by species and Statistical Area are based on average rates of return and age class contribution of stocks. Because these data are often quite limited in their accuracy due to inconsistent escapement estimation, uncertain or poorly defined stock composition data in the catch, and insufficient and/or biased age composition data, the tendency has been to apply approximate rates of return to the predominant age class or cycle year escapement for Queen Charlotte Islands salmon stocks. The schedule of fishery openings and closures is based on the amount of surplus stock identified and on the anticipated fishing effort; the latter is calculated by applying an estimated catch per unit of effort (CPUE) to the expected number of gear. Time and area limitations such as one-day fisheries with more limited boundaries are a common means of adjusting the anticipated catch to match the expected surplus.

Following the preparation of fishing expectations, fisheries managers meet with an industry advisory board, the Queen Charlotte Islands Advisory Board, to discuss and finalize fishing expectations. This board currently consists of 12 advisors from the fishing industry and includes representatives from each gear type (seine, gillnet, troll, sport) and the processing sector (B.C.Packers and Prince Rupert Fishermen's Co-operative Association). The advisory process is viewed as an integral part of fisheries management and a valuable means of communication and cooperation between DFO managers and members of the fishing industry.

Final fishing plans and stock expectations are published in the Pacific Region Commercial Fishing Guide (Append. 1-3). It is intended that pre-season forecasts of stock strength and proposed fishing plans, as defined in the Commercial Fishing Guide, serve as a guideline only. These guidelines are subject to change after further consultation with fishermen, or if stocks return differently than expected.

During the salmon season, fishery officers and biologists meet to evaluate each fishery. Catch and gear size and distribution are reviewed daily, along with information such as test fishery indices, tagging vessel catches and escapement estimates which provide a better indication of run size and timing. Based on this information, fishing plans are adjusted and reviewed with the area manager and director prior to implementation.

DATA SOURCES

As discussed above, there are a number of information sources used to assess the in-season salmon runs. For the Queen Charlottes area these are discussed in greater detail below.

1. Commercial catches

Information on commercial catches is obtained by fishery officers during fishing openings. Catches are "hailed" or verbally passed to fishery officers by fishermen who for the most part visually estimate their catches. In many cases, particularly with gillnets, catches may be delivered to other vessels (packers) in the fishing area. The officers may collect catch information from the packers; in these instances the fish are usually weighed and counted individually.

Although methods will vary, fishery officers obtain catches from a proportion of the fleet and then expand this, based on aerial or patrol vessel gear counts, to arrive at a total catch for all gear. Usually this requires that the fishing area be subdivided into several smaller areas determined by factors such as species mix in the catch and gear type. Each area would be sampled separately and the results expanded accordingly to arrive at a total catch. In extended fisheries, the fishery officer may sample a large proportion of the fleet and in many instances will obtain catch estimates from virtually all of the vessels.

2. Charter vessels

In 1982 and 1983, an International Salmon Tagging Program was carried out by the DFO, and the U.S. National Marine Fisheries Service and the Alaskan Department of Fish and Game. The purpose of this program was to determine the exploitation pattern of sockeye and pink salmon (tagged in 1982 only) in northern B.C. and southeastern Alaska. In 1983, seine and gillnet vessels were chartered to tag sockeye in various locations in Areas 1, 3, 4 and 5 and southern S.E. Alaska. Information on catches from seine tagging in Area 1 provided additional data for assessing the salmon runs in this area.

3. Indian Food Fisheries

Indian Food Fisheries are conducted usually by seine and gillnet in various locations in the Queen Charlottes. Information from these catches has been used to assess salmon runs. In 1983, catches reported from the Indian Food Fishery in Renell Sound provided additional information with which to assess passing sockeye and pink stocks.

4. Escapement

Another source of information used to manage commercial fisheries is escapement. At the start of the fishing season, the salmon run has not yet entered sanctuaries (i.e. holding areas usually adjacent to spawning streams but not open to commercial fishing) or streams, and thus no escapement information is available. However, as the season progresses and fish are observed beyond the limits of the commercial fishery, this information becomes very important. Escapement to date is compared with previous years' escapements in order to evaluate timing and run size and thereby assess fishing plans. In 1983, local escapement information was not applicable on the Queen Charlottes, as the fishery occurred on passing stocks.

Catch and escapement accounts of all five species of Pacific salmon: sockeye (Oncorhynchus nerka), coho (O. kisutch), pink (O. gorbuscha), chum (O. keta) and chinook (O. tshawytscha) are included in this report. All 1983

data are preliminary and may change slightly. All fishing period dates commence at a time of 1800 hours unless otherwise indicated. Additionally, each Statistical fishing Area is subdivided into management units (M.U.) with specific boundaries, and it is these smaller areas which are actually opened and closed during the season in order to manage the fisheries (Fig. 3). The management units are presently being revised for 1984.

AREA 1

1983 PRE-SEASON FISHING PATTERN

The 1983 salmon expectations and proposed net fishing pattern for the Queen Charlotte Islands, Area 1, are presented in Appendix 1. No net fisheries were anticipated on local stocks as escapements were expected to be less than optimum for all salmon species. Interception net fisheries targeting on passing sockeye and pink stocks of mixed origin were planned for this Area. Due to coastwide concerns for declining chinook stocks, a catch limit of 5,000 chinook was applied to Area 1. The catch limit would permit fisheries to continue to harvest target species, while minimizing the incidental chinook catch.

1983 WEEKLY FISHING SUMMARY

In Area 1, a total of 12 days of salmon fishing was expended in 1983 (Table 1). The salmon interception net fishery commenced on July 10 for 1 day/week and continued thereafter until August 23 at 2 days/week, except for a 1 day opening on July 17. Monitoring of local chum stocks continued until the area was announced closed for the balance of the season on September 30. Table 1 reviews the Area 1 fishing season in terms of weekly pre-season fishing plans, in-season management actions and the rationale for that management. Factors involved in deciding whether to open or extend the fishery included: catch levels of sockeye and pink salmon relative to chinook, co-management with Areas 2W, 3, 4, 5 and 6, Skeena stock considerations (sockeye), gear levels, the chinook catch relative to the 5,000 chinook catch limit, and the number of seasonal fishing days provided to local fishermen.

Preliminary 1983 weekly seine and gillnet commercial catches by species, number of fishing days, and gear levels for Area 1 are presented in Table 2. Catch estimates by species were as follows: 32,376 sockeye, 5,503 coho, 132,663 pink, 2,577 chum and 2,429 chinook. The 1983 net catch estimate for Area 1 of around 176,000 salmon was similar to the 1974 to 1983 mean annual salmon catch of 166,872 (Table 3), with the following catch reductions by species: 41% for sockeye, 53% for coho, 72% for chum, 60% for chinook, and a catch increase of 57% for pink salmon. Salmon catch breakdowns by gear continued to show an increase in the seine portion of the catch which accounted for 98.5% of the total net catch in 1983 (Table 3).

The annual fishing effort in Area 1 from 1954 to 1983 as indicated by seasonal gear levels, number of fishing days and mean weekly effort is presented in Table 4. Preliminary 1983 data on seasonal gear level in Area 1 indicated

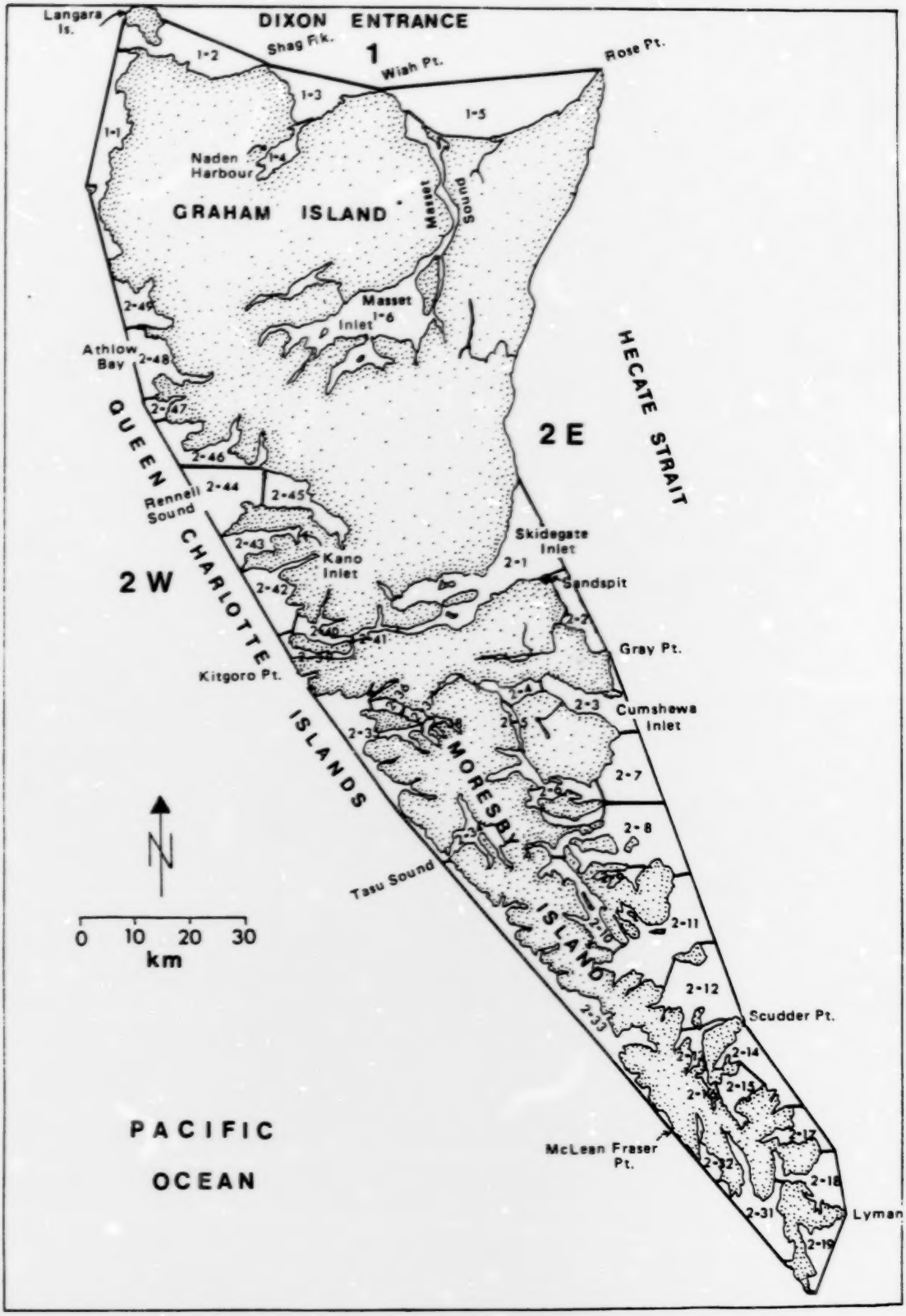

Fig. 3. Area 1, 2W and 2E management units, Queen Charlotte Islands.

Table 1. Weekly Area 1 net fishing season: pre-season plans, in-season management and rationale for management, 1983.

Date	Pre-season fishing plans	In-season management	Rationale
July 3	Open to nets 1 day; ± extension.	No opening.	-low Skeena sockeye stock indicated by test fishery -low catch by tagging vessel at Langara Island -Areas 3, 4, 5 remained closed.
July 10/11	Open to nets 1 day; ± extension.	Opened 1 day; no extension.	-relatively poor sockeye catches hailed -closed along with Areas 3, 4, 5, 6, 7, 8
July 17/18	Open to nets 1 day; ± extension.	Opened 1 day; no extension.	-relatively poor salmon catches hailed -closed along with Area 2W -Areas 3, 4, 5, 6 remained open
July 24/25	Open to nets 1 day; ± extension.	Opened 2 days.	-relatively poor sockeye and pink catches hailed -coordinated 2-day opening along with Area 2W -consideration given to seasonal fishing days provided to local fishermen -Area 4 closed after 1 day due to low Skeena sockeye stock as indicated by test fishery -Area 3, 4 and 6 remained open for exploitation of pink salmon
July 31/Aug.1	Open to nets 1 day; ± extension.	Opened 1 day; extended 1 day.	-relatively good sockeye catches hailed -coordinated fishery along with Area 2W -Area 4, 5 closed after 1 day due to low Skeena sockeye stock as indicated by test fishery and poor catches -Areas3, 6 remained open for exploitation of pink salmon
August 7/8 9	Sockeye interception fishery to close	Opened 1 day; extended 1 day.	-moderate sockeye catches hailed -coordinated opening with continuation of Area 2W fishery -consideration given to seasonal fishing days provided to local fishermen -Areas 3, 4, 5, 6 remained open for exploitation of pink salmon despite non-enhanced Skeena sockeye concerns (Skeena River Salmon Management Committee decision) -low chinook catch to date -low gear
August 14/15 16	Sockeye interception fishery to close.	Opened 1 day; extended 1 day.	-moderate sockeye and pink catches hailed -low chinook catch to date -low gear -consideration given to fishing opportunity provided to local fishermen -co-management with Areas 3, 4, 5, 6 which remained open for exploitation of pink salmon
August 21/22 23	Sockeye interception fishery to close.	Opened 1 day; extended 1 day.	-relatively poor sockeye and pink catches hailed -low chinook catch to date -low gear -consideration given to fishing opportunity provided to local fishermen -co-management with Areas 3, 4, 5, 6 which remained open for exploitation of pink salmon.

Table 2. Daily Area 1 seine and gillnet hail catches by species, number of fishing days, and gear, 1983.[a]

Date	No. days fishing	No. gear	Sockeye	Coho	Pink	Chum	Chinook
SEINE							
July 10-11	1	17	8,936	2,154	9,924	217	240
July 17-18	1	26-23	5,736	1,728	15,648	60	504
July 24-25		9-2	1,615	250	1,820	75	90
26	2	3	475	215	1,800	0	41
July 31-Aug. 1		1-3	5,250	1,050	3,120	1,050	51
Aug. 2	2	18	5,742	540	4,860	612	180
Aug. 7-8		8-5	5,198	161	1,763	69	207
9	2	4	3,880	74	820	18	55
Aug. 14-15		2	1,600	100	7,200	0	150
16	2	2	1,900	100	8,700	10	170
Aug. 21-22		2	1,450	80	2,606	50	270
23	2	6	800	25	2,350	40	240
Total	12	65	42,582	6,477	60,611	2,201	2,198
(updated preliminary catches based on sales slips)	-	-	(31,349)	(4,671)	(132,172)	(2,307)	(2,392)
GILLNET							
July 10-11	1	3	357	84	15	303	15
(updated preliminary catches based on sales slips)	-	-	(1,027)	(832)	(491)	(270)	(37)
TOTAL NETS	12	68	42,939	6,561	60,626	2,504	2,213
(updated preliminary catches based on sales slips)	-	-	(32,376)	(5,503)	(132,663)	(2,577)	(2,429)

[a]Hailed catches are subject to change when sales slip catches are processed.

Table 3. Annual commercial salmon catches by species and gear, Area 1, 1954-1983.[a]

YEAR	SOCKEYE									COHO								
	SEINE		GILLNET		NET		TROLL			SEINE		GILLNET		NET		TROLL		
	Catch	% Of total	Catch	% Of total	Catch	% Of total	Catch	% Of total	TOTAL	Catch	% Of total	Catch	% Of total	Catch	% Of total	Catch	% Of total	TOTAL
1954	52	41.60	42	33.60	94	75.20	31	24.80	125	10965	5.23	170	0.08	11135	5.31	198497	94.69	209632
1955	0	0.00	4	3.15	4	3.15	123	96.85	127	6516	1.75	49	0.01	6565	1.76	365968	98.24	372533
1956	1297	46.84	1398	50.49	2695	97.33	74	2.67	2769	2216	0.95	8283	3.55	10499	4.50	222569	95.50	233068
1957	0	0.00	421	62.56	421	62.56	252	37.44	673	3036	0.91	5476	1.64	8512	2.55	325914	97.45	334426
1958	1375	20.26	4173	61.48	5548	81.73	1240	18.27	6788	349	0.20	4704	2.68	5053	2.88	170342	97.12	175395
1959	2	0.11	1020	57.53	1022	57.64	751	42.36	1773	0	0.00	1526	1.02	1526	1.02	147935	98.98	149461
1960	196	3.47	5152	91.30	5348	94.77	295	5.23	5643	102	0.08	3169	2.55	3271	2.63	121201	97.37	124472
1961	41	1.42	2583	89.69	2624	91.11	256	8.89	2880	248	0.12	2600	1.30	2848	1.42	197281	98.58	200129
1962	306	1.60	18661	97.45	18967	99.05	182	0.95	19149	1386	0.46	15463	5.12	16849	5.58	285231	94.42	302080
1963	276	4.69	5338	90.80	5614	95.49	265	4.51	5879	2200	0.71	13324	4.28	15524	4.99	295746	95.01	311270
1964	298	2.66	10632	95.00	10930	97.66	262	2.34	11192	6830	1.95	39688	11.34	46518	13.29	303534	86.71	350052
1965	7135	26.94	19005	71.76	26140	98.70	343	1.30	26483	5393	2.24	37320	15.49	42713	17.73	198242	82.27	240955
1966	1740	10.77	14265	88.30	16005	99.07	150	0.93	16155	3532	1.05	41819	12.44	45351	13.49	290716	86.51	336067
1967	1799	5.46	30263	91.81	32062	97.26	902	2.74	32964	1005	0.48	36489	17.60	37494	18.08	169873	81.92	207367
1968	1948	3.83	48324	94.97	50272	98.80	610	1.20	50882	1416	0.38	88621	24.03	90037	24.41	278811	75.59	368848
1969	3784	8.34	40639	89.52	44423	97.86	972	2.14	45395	541	0.22	39952	16.11	40493	16.32	207576	83.68	248069
1970	1288	2.20	56462	96.55	57750	98.76	727	1.24	58477	1290	0.46	70182	25.01	71472	25.47	209191	74.53	280663
1971	7308	12.84	48481	85.17	55789	98.01	1135	1.99	56924	2386	1.02	52306	22.39	54692	23.41	178913	76.59	233605
1972	14045	21.04	51993	77.90	66038	98.95	702	1.05	66740	7731	2.84	54025	19.86	61756	22.71	210223	77.29	271979
1973	14770	46.85	16290	51.68	31060	98.53	463	1.47	31523	917	0.66	7466	5.37	8383	6.03	130672	93.97	139055
1974	5015	19.43	11398	44.15	16413	63.58	9403	36.42	25816	1491	0.89	9836	5.88	11327	6.77	156066	93.23	167393
1975	9756	28.11	16844	48.54	26600	76.65	8103	23.35	34703	3392	2.65	15697	12.25	19089	14.90	109051	85.10	128140
1976	5418	38.74	7417	53.03	12835	91.77	1151	8.23	13986	1400	2.09	2687	4.01	4087	6.09	62974	93.91	67061
1977	13294	34.41	23238	60.14	36532	94.55	2107	5.45	38639	2451	2.46	1148	1.15	3599	3.61	96031	96.39	99630
1978	4797	73.91	894	13.78	5691	87.69	799	12.31	6490	2751	1.03	403	0.15	3154	1.18	264158	98.82	267312
1979	65288	87.65	4220	5.68	69508	93.52	4813	6.48	74321	15181	5.31	1164	0.41	16345	5.72	269487	94.28	285832
1980	46027	59.16	27026	34.74	73053	93.89	4751	6.11	77804	11422	3.71	16152	5.25	27574	8.97	279946	91.03	307520
1981	177831	77.75	42065	18.39	219896	96.14	8837	3.86	228733	10869	5.07	5953	2.78	16822	7.85	197574	92.15	214396
1982	50665	92.67	800	1.26	59465	93.93	3840	6.07	63305	9870	6.33	90	0.06	9960	6.39	146075	93.62	156035
1983[b]	31340	88.08	1027	2.82	32378	88.90	4044	11.10	36420	4871	1.31	832	0.23	5603	1.54	362771	98.46	367804
AVERAGE 1954-63	355	12	3879	64	4234	76	347	24	4581	2702	1	5476	2	8178	3	233068	97	241247
1964-73	5412	14	33635	84	39047	98	627	2	39674	3104	1	46787	17	49891	18	217775	82	267666
1974-83	41744	60	13480	28	56237	88	4786	12	60022	6360	3	6308	3	11746	6	193376	94	205121

YEAR	PINK									CHUM								
	SEINE		GILLNET		NET		TROLL			SEINE		GILLNET		NET		TROLL		
	Catch	% Of total	Catch	% Of total	Catch	% Of total	Catch	% Of total	TOTAL	Catch	% Of total	Catch	% Of total	Catch	% Of total	Catch	% Of total	TOTAL
1954	149336	95.77	1028	0.66	150364	96.43	5574	3.57	155938	31108	91.66	2266	6.68	33374	98.33	566	1.67	33940
1955	0	0.00	22	0.13	22	0.13	16708	99.87	16730	5175	86.41	17	0.28	5192	86.69	797	13.31	5989
1956	109181	66.67	37677	23.01	146858	89.68	16908	10.32	163766	12899	70.81	4527	24.85	17426	95.66	790	4.34	18216
1957	0	0.00	2901	11.48	2901	11.48	22367	88.52	25268	51060	89.23	5481	9.58	56541	98.80	684	1.20	57225
1958	475012	79.63	75680	12.69	550692	92.32	45843	7.68	596535	3459	35.55	5423	55.73	8882	91.28	848	8.72	9730
1959	923	3.86	715	2.99	1638	6.85	22274	93.15	23912	1777	79.29	168	7.50	1945	86.79	296	13.21	2241
1960	18198	35.84	21913	43.16	40111	79.00	10660	21.00	50771	105	4.95	1757	82.80	1862	87.75	260	12.25	2122
1961	3981	15.13	1753	6.66	5734	21.79	20578	78.21	26312	217	19.51	603	54.23	820	73.74	292	26.26	1112
1962	54347	25.26	65094	30.18	119441	55.38	96248	44.62	215689	330	6.97	2754	83.43	2984	90.40	317	9.60	3301
1963	61	0.09	25503	35.90	25564	35.99	45473	64.01	71037	108	2.10	4078	79.31	4186	81.41	956	18.59	5142
1964	200470	68.55	29577	10.11	230047	78.67	62376	21.33	292423	7565	51.92	6050	41.52	13615	93.45	955	6.55	14570
1965	38951	51.27	11105	14.62	50056	65.88	25919	34.12	75975	2267	20.20	7750	69.04	10017	89.24	1208	10.76	11225
1966	1025061	76.69	261967	19.60	1287028	96.29	49523	3.71	1336551	9324	42.99	11848	54.63	21172	97.63	515	2.37	21687
1967	3758	4.31	44213	50.70	47971	55.01	39232	44.99	87203	4158	16.56	20106	80.09	24266	96.65	841	3.35	25107
1968	722456	77.11	103682	11.07	826138	88.18	110719	11.82	936857	941	3.76	23439	93.62	24380	97.38	656	2.62	25036
1969	1452	2.98	15344	31.44	16796	34.42	32003	65.58	48799	2277	6.24	33848	92.79	36125	99.03	353	0.97	36478
1970	134488	40.49	123154	37.08	257642	77.57	74485	22.43	332127	4062	12.11	28768	85.76	32830	97.87	714	2.13	33544
1971	7855	7.88	42025	42.16	49880	50.04	49809	49.96	99689	6140	16.57	30281	81.73	36421	98.30	629	1.70	37050
1972	154319	48.78	37445	11.84	191764	60.61	124622	39.39	316386	8000	15.66	41324	80.89	49324	96.55	1762	3.45	51086
1973	15425	29.25	5925	11.24	21350	40.49	31380	59.51	52730	30769	56.62	22681	41.74	53450	98.36	891	1.64	54341
1974	69304	57.13	7509	6.19	76813	63.32	44504	36.68	121317	5042	24.59	14578	71.10	19620	95.69	884	4.31	20504
1975	16646	26.10	23276	36.49	39922	62.59	23862	37.41	63784	3282	27.13	8073	66.74	11355	93.87	741	6.13	12096
1976	3862	59.72	1482	22.92	5344	82.63	1123	17.37	6467	1089	39.43	1476	53.44	2565	92.87	197	7.13	2762
1977	37595	34.27	5048	4.60	42643	38.87	67063	61.13	109706	3439	55.69	1732	28.05	5171	83.74	1004	16.26	6175
1978	17680	23.48	167	0.22	17847	23.70	57445	76.30	75292	3980	45.09	1943	22.01	5923	67.10	2904	32.90	8827
1979	126096	52.53	1189	0.50	127285	53.02	112766	46.98	240051	5332	59.94	852	9.58	6184	69.51	2712	30.49	8896
1980	98261	11.88	7475	0.90	105736	12.78	721646	87.22	827382	8020	40.51	2622	13.24	10642	53.75	9158	46.25	19800
1981	263961	48.69	14131	2.61	278092	51.29	264065	48.71	542157	10336	48.79	6386	30.26	16882	79.05	4421	20.95	21103
1982	18036	24.21	107	0.14	18143	24.34	56340	75.64	74483	12192	82.53	259	1.73	12451	84.26	2326	15.74	14777
1983[b]	132172	40.64	491	0.15	132663	40.79	192646	59.21	326208	2307	29.39	270	3.44	2677	32.83	5273	67.17	7950
AVERAGE 1954-63	81104	32	23229	17	104333	49	30263	51	134596	10614	49	2707	40	13321	89	581	11	13902
1964-73	230424	41	67444	24	297867	65	60007	35	357874	7550	24	22610	72	30160	96	852	4	31012
1974-83	78381	38	6088	7	84449	45	104136	55	238585	6408	46	3819	30	9317	76	2862	26	12270

Table 3 (cont'd).

YEAR	CHINOOK									TOTAL SALMON								
	SEINE		GILLNET		NET		TROLL			SEINE		GILLNET		NET		TROLL		
	Catch	% Of total	Catch	% Of total	Catch	% Of total	Catch	% Of total	TOTAL	Catch	% Of total	Catch	% Of total	Catch	% Of total	Catch	% Of total	TOTAL
1954	3	0.01	146	0.53	149	0.54	27310	99.46	27459	191464	44.83	3652	0.86	195116	45.68	231978	54.32	427094
1955	0	0.00	2	0.01	2	0.01	21779	99.99	21781	11691	2.80	94	0.02	11785	2.83	405375	97.17	417160
1956	3	0.02	46	0.24	49	0.26	18827	99.74	18876	125596	28.76	51931	11.89	177527	40.65	259168	59.35	436695
1957	0	0.00	52	0.27	52	0.27	19482	99.73	19534	54096	12.38	14331	3.28	68427	15.65	368699	84.35	437126
1958	60	0.19	161	0.51	221	0.69	31591	99.31	31812	480255	58.55	90141	10.99	570396	69.54	249864	30.46	820260
1959	0	0.00	41	0.13	41	0.13	31948	99.87	31989	2702	1.29	3470	1.66	6172	2.95	203204	97.05	209376
1960	18	0.08	119	0.50	137	0.57	23803	99.43	23940	18619	9.00	32110	15.52	50729	24.51	156219	75.49	206948
1961	1	0.00	39	0.11	40	0.11	35216	99.89	35256	4489	1.69	7578	2.85	12066	4.54	253623	95.46	265689
1962	65	0.37	169	0.97	234	1.34	17230	98.66	17464	56334	10.10	102141	18.32	158475	28.42	399208	71.58	557683
1963	5	0.02	165	0.78	170	0.81	20920	99.19	21090	2650	0.64	48408	11.68	51058	12.32	363360	87.68	414418
1964	26	0.06	529	1.15	555	1.21	45374	98.79	45929	215199	30.13	86476	12.11	301665	42.24	412501	57.76	714166
1965	1379	4.39	528	1.23	2407	5.62	40400	94.38	42807	55625	14.00	75708	19.05	131333	33.04	266112	66.96	397445
1966	437	0.40	717	1.21	954	1.61	58180	98.39	59134	1039894	58.76	330616	18.68	1370510	77.45	399084	22.55	1769594
1967	217	0.41	1509	2.82	1726	3.23	51731	96.77	53457	10937	2.69	132582	32.65	143519	35.34	262579	64.66	406098
1968	611	1.06	1898	3.30	2509	4.36	55010	95.64	57519	727372	50.54	265964	18.48	993336	69.02	445806	30.98	1439142
1969	698	1.24	1969	3.51	2667	4.75	53450	95.25	56117	8752	2.01	131752	30.30	140504	32.31	294354	67.69	434858
1970	222	0.28	2737	3.48	2959	3.77	75582	96.23	78541	141350	18.04	281303	35.91	422653	53.95	360699	46.05	783352
1971	794	1.10	2156	2.98	2950	4.07	69505	95.93	72455	24483	4.90	175249	35.07	199732	39.97	299991	60.03	499723
1972	857	1.42	1297	2.14	2154	3.56	58396	96.44	60550	184952	24.12	186084	24.27	371036	48.39	395705	51.61	766741
1973	270	0.49	372	0.67	642	1.15	55007	98.85	55649	62151	18.65	52734	15.82	114885	34.47	218413	65.53	333298
1974	4337	5.63	800	1.04	5137	6.67	71861	93.33	76998	85189	20.68	44121	10.71	129310	31.39	282718	68.62	412028
1975	4383	4.27	2730	2.66	7113	6.93	95476	93.07	102589	37459	10.98	66620	19.52	104079	30.49	237233	69.51	341312
1976	1480	2.78	519	0.97	1999	3.75	51265	96.25	53264	13249	9.23	13581	9.46	26830	18.69	116710	81.31	143540
1977	4611	8.66	700	1.31	5311	9.97	47952	90.03	53263	61390	19.97	31866	10.37	93256	30.34	214157	69.66	307413
1978	2187	2.97	77	0.10	2264	3.00	71322	96.92	73586	31395	7.28	3484	0.81	34879	8.08	396628	91.92	431507
1979	6475	9.98	280	0.43	6755	10.41	58134	89.59	64889	218372	32.40	7705	1.14	226077	33.54	447912	66.46	673989
1980	6014	8.05	754	1.01	6768	9.06	67934	90.94	74702	169744	12.99	54029	4.13	223773	17.12	1083435	82.88	1307208
1981	13356	15.86	748	0.89	14104	16.75	70100	83.25	84204	476313	43.67	69283	6.35	545596	50.03	544997	49.97	1090593
1982	9329	7.87	20	0.02	9349	7.88	109247	92.12	118596	108095	25.30	1273	0.30	109368	25.60	317828	74.40	427196
1983[b]	2392	2.37	37	0.04	2429	2.40	98667	97.60	101096	172891	20.87	2867	0.32	175548	21.19	652920	78.81	828468
AVERAGE 1954-63	16	0	94	0	110	0	24811	100	24920	94790	17	35386	8	130175	25	289070	75	419245
1964-73	581	1	1371	2	1952	3	56264	97	58216	247071	32	171847	24	418917	47	335524	53	754442
1974-83	6466	7	887	1	8123	8	74198	92	80319	137410	20	29462	6	166872	27	429464	73	596326

[a] From B.C. Catch Statistics.

[b] Preliminary catch estimates based on sales slips.

Table 4. Annual salmon fishing effort by gear, Area 1, 1954-1983.

YEAR	NO. GEAR			NO. DAYS FISHING		MEAN EFFORT/WEEK FISHING[a]		
	Seine	Gillnet	Troll	Seine	Gillnet	Seine	Gillnet	Troll
1954	194	30	8760	44	39	21.5	2.5	[illegible]
[illegible]	[illegible]	[illegible]	10532	14	15	[illegible]	[illegible]	[illegible]
[illegible]	156	466	8131	45	75	17.5	[illegible]	[illegible]
[illegible]	96	330	9379	25	75	[illegible]	[illegible]	[illegible]
1958	372	630	6675	47	64	14.5	4.2	[illegible]
1959	4	89	8237	3	69	2	6.5	[illegible]
1960	52	364	8161	20	85	13	26	[illegible]
1961	5	234	9927	14	86	1.5	[illegible]	[illegible]
1962	40	972	8379	55	92	3.5	21	[illegible]
1963	10	727	7985	31	82	1.5	5.5	[illegible]
1964	[illegible]	1024	9969	40	76	12	26.5	[illegible]
1965	79	874	9337	49	129	6.5	26.5	[illegible]
1966	366	1359	8544	52.5	67.5	20	40	[illegible]
1967	22	1316	9471	36	75	2.5	37.5	[illegible]
1968	380	2393	10835	27	75	34.5	[illegible]	[illegible]
1969	48	1733	11552	32	[illegible]	3.5	36	[illegible]
1970	109	2412	13848	36	54	11	134	[illegible]
1971	63	2279	11101	37.5	71.5	6.5	[illegible]	[illegible]
1972	169	2046	9783	45	53	14	[illegible]	[illegible]
1973	135	700	8806	35	49	11.5	41.5	[illegible]
1974	121	690	9298	30	42	11	[illegible]	[illegible]
1975	216	1050	11526	30	55	15.5	56.5	[illegible]
1976	107	301	8859	20	20	18	[illegible]	[illegible]
1977	225	446	8744	30	44	20.5	29.5	[illegible]
1978	62	55	11193	20	20	[illegible]	5.5	[illegible]
1979	269	79	13896	21	19	30	10	[illegible]
1980	169	589	24109	18	18	17	59	[illegible]
1981	184	156	8471	21	18	18.5	[illegible]	[illegible]
1982	168	29	18175	9	7	33.5	[illegible]	[illegible]
1983[b]	65	3	N/A[c]	13	1	9.5	[illegible]	N/A
AVG. 1954-83	[illegible]	965	8821	30	63	12	25	382
1954-73	151	1614	10325	39	73	16	94	425
1974-83	139	340	12697	21	24	16	26	509

[a] Total No. gear/No. weeks fishing.
[b] Preliminary effort estimates.
[c] Not available at time of printing.

65 seines and 3 gillnets which was well below the 1974 to 1983 averages of 159 seines and 340 gillnets. Similarly, the number of fishing days and mean weekly effort in 1983 were well below the previous 10-year averages (Table 4).

ESCAPEMENTS, AREA 1

The annual salmon escapements to Area 1 by species for the period 1947 to 1983 are presented in Table 5. The 1983 escapements for all salmon species were below the optimum levels and below the previous 10-year averages as follows: sockeye escapement of 19,500 (28% reduction); chinook, 600 (30% reduction); coho, 20,600 (62% reduction); chum, 25,225 (21% reduction); and pink, 2,130 (40% reduction). As was forecast, these stocks were insufficient to warrant any commercial fisheries and the majority of the 1983 catch in Area 1 was comprised of migrating stocks.

REVIEW OF PAST AND PRESENT FISHERIES, AREA 1

Assessment of the Area 1 salmon interception net fisheries in terms of historical catch trends, comparison between the pre-season and actual fishing strategies, stock composition, management, and fleet control is provided in the following section.

Since 1951, when Area Histories became available as documents of salmon fishing and escapement, net fisheries have typically occurred in Area 1 for exploitation of sockeye, coho, pink and chum salmon. Chinook salmon were only incidentally taken in small quantities by nets, the major portion of catch of this species coming from the troll fleet (Table 3). Odd-year pink catches were largely comprised of passing stocks with a prominent troll component and increasing seine component in recent years. Net fisheries targeting on chum and even-year pink salmon occurred more terminally while sockeye were intercepted largely in outside waters. "It is presumed that a very large percentage of the sockeye caught were transient salmon, probably those proceeding to the Skeena or Grenville-Principe areas" (Dept. Fisheries and Oceans MS 1956). "Terminal sockeye catches were reserved almost exclusively for the Indian Food Fishery" (Dept. Fisheries and Oceans MS 1960).

The timing of the sockeye catch ranged from late May to early October, with the majority of catch occurring in the late June to mid-to-late July. The interception gillnet catch escalated in the mid-1960's through early 1970's with intensified effort on sockeye by local fishermen. However, by 1973, the seine component of the sockeye catch increased with respect to the gillnet share, and has risen steadily in more recent years (Table 3). In 1981, peak interception catches of sockeye, pink and chinook salmon were realized by seines in Area 1 despite a Departmental policy to limit interception net fisheries, such as Area 1, to 2 days/week. Large stock returns of Skeena sockeye and of pink salmon from Skeena and Fraser rivers and southeast Alaska largely accounted for the record catches that year. Because of increasing concerns for coastal chinook salmon, a catch limit of 5,000 net-caught chinook was imposed in 1982 for Area 1 in addition to Area 2W. At the same time, an in-season two-week troll closure was initiated in North Coast waters as a preliminary means of limiting the troll exploitation on chinook.

Table 5. Annual spawning escapements for sockeye, chinook, coho, chum and pink, Area 1, 1947-1983.

YEAR	SOCKEYE	CHINOOK	COHO	CHUM	PINK
194[illegible]	10700	1500	13475	48225	1500
1948	11000	750	47900	49100	3756500
1949	NA[a]	NA	4700	20400	3500
1950	NA	NA	16500	11000	277500
1951	23[illegible]	NA	44900	119200	3500
1952	7400	1500	12950	50800	541400
1953	5000	NA	1200	122475	25[illegible]
1954	1500	NA	10400	30750	3[illegible]
1955	NA	NA	5050	22550	NA
1956	3500	750	7675	3700	440300
1957	3050	1500	13550	148775	1650[illegible]
1958	39525	NA	9150	23500	402000
1959	12500	3500	21200	18500	15[illegible]
1960	13250	750	14150	15125	985[illegible]
1961	12250	3500	23850	36025	30[illegible]
1962	18100	1500	35600	14275	178675
1963	13250	NA	12175	10700	28575
1964	25500	7500	60300	50025	441825
1965	10250	12000	77850	161600	36550
1966	5425	7500	13025	93950	1068625
1967	8525	1500	23625	318[illegible]	150
1968	20400	1500	10250	37500	1335900
1969	48500	1500	6825	45000	2[illegible]
1970	26500	800	24050	24600	432650
1971	16500	500	14335	44500	6050
1972	17500	1000	26150	3600	339900
1973	38000	900	58350	50000	4000
1974	39000	1000	97100	41800	201400
1975	16500	1500	47000	53050	3950
1976	40900	700	153500	53500	265050
1977	26750	600	55400	59300	4900
1978	20300	600	61150	36200	217500
1979	30650	475	54750	33450	3135
1980	34400	600	17580	14458	230795
1981	33000	650	18000	26100	3650
1982	28500	1400	35250	70800	211250
1983	19500	600	20600	35225	2130
				ODD-YEAR	EVEN-YEAR
AVG. 1947-63	13553	1694	17060	45796	1[illegible]
1964-73	21710	3570	31476	59255	9[illegible]
1974-83	26950	853	54043	44366	3551

[a]Not available.

Assessment of 1983 salmon fishery, Area 1

In 1983, the pre-season management objective of limiting the chinook net catch to less than 5,000 pieces was maintained in Area 1. The net fishery was extended by 3 weeks (6 days) beyond the pre-season fishing plan partially because of the relative low chinook catch and in order to provide extended fishing opportunity to the few local seiners that were fishing the area. Although late-run Skeena sockeye stock concerns were expressed at a mid-season meeting of the Skeena River Salmon Management Committee and its Advisory Board, fishing continued in Area 1 where interceptions of both Skeena and Fraser sockeye were known to occur. This coincided in part with the Skeena River Advisory Board decision not to forego completely pink salmon surpluses but to balance these against the late run Skeena sockeye concerns (Kadowaki 1983).

The sockeye age and stock composition of the 1983 catch will be derived at a later date from scale samples, tissue samples (electrophoretic analysis), and tag recovery results of the International Tagging Program. The program was conducted jointly between Canada and the U.S. and a portion of the Canadian sampling occurred at Langara Island in Area 1 (Fig. 3). Preliminary 1982 results of the tagging program indicated a seasonal average sockeye stock composition of 75% Skeena, 13% Nass, and 12% Alaskan origin, with a peak Skeena sockeye stock composition of 89% during the month of July (Riddell 1983). Although contributions of the small northern Queen Charlotte Islands sockeye populations, namely Mercer, Naden and Ain River sockeye, were not measured in 1982, presumably minor catch components of these stocks also occurred as their escapement timing overlapped with the onset of the interception net fishing.

The relatively low sockeye interception catch in Area 1 in 1983 reflected in part the slightly below average Skeena River sockeye abundance of 1.6 million (R. Kadowaki, DFO, pers. comm.). Additionally, the warmer waters of the El Nino may have influenced other passing stocks, including Fraser River sockeye and pink salmon, to migrate in slightly different patterns so as to "miss" interception points in Area 1.

Although no stock composition data were collected from the Area 1 pink salmon catch, timing information, stock strength data, and previous tagging distribution studies indicated that the catch was most likely comprised of stocks originating from the Nass and Skeena rivers, southeast Alaska and the Fraser River.

In terms of stock management, the 1983 Area 1 sockeye interception net fishery exploited an estimated 2 % of the Skeena River sockeye stock. The extension of the fishery through mid-August may have augmented late-run Skeena sockeye concerns only slightly since the majority of that run would have likely passed through the interception area at the onset of the extension. Late sockeye interceptions were small and probably of Fraser River origin, and no sockeye conservation concerns were anticipated here for 1983.

Although the stock composition of the pink salmon catch was less well-defined, surpluses were expected for all stocks thought to be intercepted in

Area 1, excepting the small, local, off-cycle year pink salmon run. The timing of this minor run in early-to-mid-August would have made it vulnerable to exploitation in the extended portion of the Area 1 net fishery; however, the low stock proportions relative to the major passing stocks in the area and the estimated low exploitation rate would have minimized harvest impacts.

Fleet management of the area coincided with that of one or more of Areas 2W, 3, 4, 5 and 6, thus maintaining a moderate balance of gear spread across the North Coast salmon fishing areas. The low gear exhibited in Area 1 in 1983 was a consequence of the relatively poor passing stock abundance in the area.

AREA 2W

1983 PRE-SEASON FISHING PATTERN

As in Area 1, no net fisheries were anticipated on local stocks in Area 2W as escapements were expected to be less than optimum for all salmon species (Append. 2). Interception net fisheries targeting on passing sockeye and pink stocks of mixed origin were planned for this Area. After meeting with the Advisory Board in spring of 1983, the option of fishing 2 days/week for 3 weeks during the peak abundance of passing sockeye and pink stocks was selected. Due to coastwide concerns for declining chinook stocks, a catch limit of 5,000 chinook was applied to Area 2W. Again as in Area 1, the catch limit would permit fisheries to continue to harvest target species while minimizing the incidental chinook catch. In the past, chinook catches had been increasing in this area and thus the catch limit was designed to discourage vessels from fishing at sites of high chinook concentration.

1983 WEEKLY FISHING SUMMARY, AREA 2W

In Area 2W, a total of nine days of salmon fishing was expended in 1983 (Table 6). The salmon interception net fishery commenced on July 17 with a 1-day opening, continued for two weeks with 3-day opening/week, and ended with a 2-day opening on August 7. Monitoring of local chum stocks continued until the area was announced closed for the balance of the season on September 30. Table 6 reviews the Area 2W fishing season in terms of weekly pre-season fishing plans, in-season management actions and the rationale for that management. Factors involved in deciding whether to open or extend the fishery included: catch levels of sockeye and pink salmon relative to chinook, co-management with Areas 1, 3, 4, 5 and 6, international policy, gear levels, fishing conditions, the chinook catch relative to the 5,000 chinook catch ceiling, Fraser stock considerations (sockeye), and the number of seasonal fishing days provided to local fishermen.

Preliminary 1983 weekly seine and gillnet commercial catches by species, number of fishing days and gear levels for the Area 2W are presented in Table 7. Catch estimates by species were as follows: 200,592 sockeye, 4,341 coho, 288,037 pink, 6,351 chum and 3,698 chinook. The 1983 net catch estimate for Area 2W of around 503,000 salmon was the fourth highest since 1954 (Table 8). The 1983 sockeye catch estimate of 200,592 was the highest on

Table 6. Weekly Area 2W net fishing season: pre-season plans, in-season management and rationale for management, 1983.

Date	Pre-season fishing plans	In-season management	Rationale
July 17/18	Open to nets 2 days.	Opened 1 day; no extension.	-poor salmon catches hailed -low sockeye catch relative to chinook -closed along with Area 1
July 24/25 26 27	Open to nets 2 days.	Opened 2 days; extended 1 day.	-high sockeye and pink catches hailed -low to moderate gear -low chinook catches -consideration given to seasonal fishing opportunities provided to nets in the North Coast. -management policy in previous years to limit interception net fisheries to 2 days/week -relatively good fishing conditions -co-management with Area 3; other North Coast areas and Johnstone Strait closed after 1-2 days
July 31/Aug.1 Aug. 2 Aug. 3	Open to nets 2 days.	Opened 2 days; extended 1 day.	-relatively good sockeye, fair pink catches hailed -moderate gear -moderate fishing conditions -low chinook catch to date -consideration given to seasonal fishing opportunities provided to nets in the North Coast -co-management with Area 3; other north coast seine fisheries closed after 1-2 days
August 7/8 9	Sockeye interception fishery to close.	Opened 1 day; extended 1 day	-low chinook catch to date -consideration given to seasonal fishing opportunities provided to nets in the North Coast -fair sockeye catches, moderately good pink catches hailed -low gear -co-management with Areas 1, 3, 4, 5, 6 -Fraser River stock concerns (sockeye)

Table 7. Daily Area 2W seine and gillnet hail catches by species, number of fishing days, and gear, 1983[a].

Date	No. days fishing	No. gear	Sockeye	Coho	Pink	Chum	Chinook
SEINE							
July 17-18	1	8-3	61	69	9	12	104
July 24-25		4-14	33,500	465	50,850	1,035	461
26		55	27,162	1,435	42,023	680	429
27	3	55	33,259	922	29,894	1,322	448
July 31-Aug. 1		43-37	85,302	2,465	29,920	1,387	364
Aug. 1		37	53,603	1,758	23,386	1,208	444
3	3	41	33,015	1,100	15,093	659	355
Aug. 7-8		11-12	18,200	104	34,200	58	402
9	2	14	6,140	91	5,890	28	472
Total	9	93	290,242	8,409	231,265	6,389	3,479
(updated preliminary catches based on sales slips)	-	-	(200,592)	(4,341)	(288,037)	(6,351)	(3,698)
GILLNET	0	0	0	0	0	0	0
TOTAL NETS	9	93	290,242	8,409	231,265	6,389	3,479
(updated preliminary catches based on sales slips)	-	-	(200,592)	(4,341)	(288,037)	(6,351)	(3,698)

[a]Hailed catches are subject to change when sales slip catches are processed.

Table 8. Annual commercial salmon catches by species and gear, Area 2W, 1954-1983[a].

YEAR	SOCKEYE									COHO								
	SEINE		GILLNET		NET		TROLL			SEINE		GILLNET		NET		TROLL		
	Catch	% Of total	Catch	% Of total	Catch	% Of total	Catch	% Of total	TOTAL	Catch	% Of total	Catch	% Of total	Catch	% Of total	Catch	% Of total	TOTAL
1954	40	100.00	0	0.00	40	100.00	0	0.00	40	14710	91.50	38	0.24	14748	91.74	1328	8.26	16076
1955	4381	100.00	0	0.00	4381	100.00	0	0.00	4381	3363	69.28	125	2.58	3488	71.86	1366	28.14	4854
1956	322	56.99	243	43.01	565	100.00	0	0.00	565	3451	61.10	1	0.02	3452	61.12	2196	38.88	5648
1957	5178	79.83	1305	20.12	6483	99.95	3	0.05	6486	806	17.76	0	0.00	806	17.76	3732	82.24	4538
1958	0	0.00	2973	99.97	2973	99.97	1	0.03	2974	118	7.46	248	15.69	366	23.15	1215	76.85	1581
1959	80	9.63	751	90.37	831	100.00	0	0.00	831	0	0.00	20	0.88	20	0.88	2265	99.12	2285
1960	427	20.44	1661	79.51	2088	99.95	1	0.05	2089	166	5.90	0	0.00	166	5.90	2646	94.10	2812
1961	0	0.00	1026	100.00	1026	100.00	0	0.00	1026	68	2.07	25	0.76	93	2.83	3190	97.17	3283
1962	1835	40.14	2729	59.69	4564	99.83	8	0.17	4572	0	0.00	118	0.50	118	0.50	23396	99.50	23514
1963	0	0.00	3203	99.78	3203	99.78	7	0.22	3210	0	0.00	0	0.00	0	0.00	17371	100.00	17371
1964	1	0.09	1071	99.17	1072	99.26	8	0.74	1080	3532	15.70	249	1.11	3781	16.81	18711	83.19	22492
1965	0	0.00	517	98.48	517	98.48	8	1.52	525	3242	22.84	1073	7.56	4315	30.40	9878	69.60	14193
1966	4	0.20	2032	99.61	2036	99.80	4	0.20	2040	4338	19.42	630	2.82	4968	22.24	17372	77.76	22340
1967	1	0.19	508	97.32	509	97.51	13	2.49	522	1893	13.27	241	1.69	2134	14.96	12131	85.04	14265
1968	1408	72.58	527	27.16	1935	99.74	5	0.26	1940	1502	12.08	786	6.32	2288	18.40	10145	81.60	12433
1969	25	1.92	1258	96.69	1283	98.62	18	1.38	1301	950	9.08	180	1.72	1130	10.80	9333	89.20	10463
1970	38	8.78	270	62.36	308	71.13	125	28.87	433	10024	49.74	644	3.20	10668	52.93	9486	47.07	20154
1971	161	6.81	2171	91.84	2332	98.65	32	1.35	2364	3096	23.45	107	0.81	3203	24.26	10002	75.74	13205
1972	348	7.45	4221	90.37	4569	97.82	102	2.18	4671	3162	21.20	963	6.46	4125	27.66	10787	72.34	14912
1973	2	0.10	2027	99.46	2029	99.56	9	0.44	2038	810	15.38	267	5.07	1077	20.44	4191	79.56	5268
1974	22227	81.43	1001	3.67	23228	85.09	4069	14.91	27297	1441	11.47	505	4.02	1946	15.50	10612	84.50	12558
1975	5991	87.60	834	12.19	6825	99.80	14	0.20	6839	2738	32.39	1803	21.33	4541	53.73	3911	46.27	8452
1976	4543	87.33	632	12.15	5175	99.48	27	0.52	5202	4281	26.98	343	2.16	4624	29.14	11244	70.86	15868
1977	42990	99.17	275	0.63	43265	99.80	86	0.20	43351	3886	42.87	327	3.61	4213	46.48	4852	53.52	9065
1978	11358	86.81	1584	12.11	12942	98.92	141	1.08	13083	6437	16.31	72	0.18	6509	16.49	32956	83.51	39465
1979	179690	99.29	1001	0.55	180691	99.84	289	0.16	180980	25214	48.87	177	0.34	25391	49.22	26199	50.78	51590
1980	25608	88.80	2459	8.53	28067	97.33	771	2.67	28838	15804	19.44	831	1.02	16635	20.46	64664	79.54	81299
1981	56224	96.35	580	0.99	56804	97.34	1550	2.66	58354	7430	12.45	257	0.43	7687	12.88	52001	87.12	59688
1982	9409	56.09	660	3.93	10069	60.02	6707	39.98	16776	3856	9.48	186	0.46	4042	9.93	36645	90.07	40687
1983[b]	200692	99.80	0	0.00	200692	99.80	407	0.20	200999	4341	15.24	0	0.00	4341	15.24	24140	84.76	28481
AVERAGE 1954-63	1226	41	1389	59	2615	100	2	0	2617	2268	26	58	2	2326	28	5871	72	8196
1964-73	199	10	1460	86	1659	96	32	4	1691	3255	20	514	4	3769	24	11204	76	14973
1974-83	66883	88	903	5	68788	93	1408	6	68172	7643	24	450	3	7993	27	26722	73	34715

YEAR	PINK									CHUM								
	SEINE		GILLNET		NET		TROLL			SEINE		GILLNET		NET		TROLL		
	Catch	% Of total	Catch	% Of total	Catch	% Of total	Catch	% Of total	TOTAL	Catch	% Of total	Catch	% Of total	Catch	% Of total	Catch	% Of total	TOTAL
1954	1036538	100.00	31	0.00	1036569	100.00	11	0.00	1036580	202758	99.26	1504	0.74	204262	100.00	0	0.00	204262
1955	7	9.72	2	2.78	9	12.50	63	87.50	72	20349	95.80	890	4.19	21239	99.99	2	0.01	21241
1956	82983	99.97	0	0.00	82983	99.97	28	0.03	84011	82931	99.83	144	0.17	83075	100.00	1	0.00	83076
1957	2487	98.85	0	0.00	2487	98.85	29	1.15	2516	7166	100.00	0	0.00	7166	100.00	0	0.00	7166
1958	181021	96.84	5575	2.98	186596	99.82	329	0.18	186925	3951	47.73	4323	52.22	8274	99.95	4	0.05	8278
1959	0	0.00	2	3.64	2	3.64	53	96.36	55	12799	87.66	1802	12.34	14601	100.00	0	0.00	14601
1960	164705	99.89	120	0.07	164825	99.96	61	0.04	164886	1243	100.00	0	0.00	1243	100.00	0	0.00	1243
1961	0	0.00	0	0.00	0	0.00	34	100.00	34	3117	92.88	235	7.00	3352	99.88	4	0.12	3356
1962	0	0.00	61	1.09	61	1.09	5561	98.91	5622	0	0.00	1364	99.42	1364	99.42	8	0.58	1372
1963	0	0.00	0	0.00	0	0.00	1557	100.00	1557	0	0.00	1	0.81	1	0.81	123	99.19	124
1964	1369	45.68	30	1.00	1399	46.68	1598	53.32	2997	184532	86.73	28191	13.25	212723	99.98	48	0.02	212771
1965	6	0.60	4	0.40	10	1.00	993	99.00	1003	72793	78.40	19951	21.49	92744	99.88	109	0.12	92853
1966	198771	99.19	5	0.00	198776	99.19	1628	0.81	200404	51435	91.02	5005	8.86	56440	99.88	69	0.12	56509
1967	11449	83.74	53	0.39	11502	84.13	2170	15.87	13672	27531	69.36	12133	30.57	39664	99.92	31	0.08	39695
1968	226799	98.68	348	0.15	227147	98.84	2677	1.16	229824	52030	79.32	13545	20.65	65575	99.98	16	0.02	65591
1969	116	8.74	19	1.43	135	10.17	1192	89.83	1327	63778	88.73	8085	11.25	71863	99.98	14	0.02	71877
1970	314181	98.32	2423	0.76	316604	99.08	2947	0.92	319551	167749	87.36	24190	12.60	191929	99.96	71	0.04	192010
1971	14	0.84	14	0.84	28	1.67	1647	98.33	1675	79030	96.11	3124	3.80	82154	99.91	72	0.09	82226
1972	642901	98.42	7817	1.20	650718	99.62	2474	0.38	653192	102810	84.37	18767	15.40	121577	99.77	280	0.23	121857
1973	3	0.37	1	0.12	4	0.49	814	99.51	818	54425	83.69	10527	16.19	64952	99.88	80	0.12	65032
1974	210783	99.22	429	0.20	211212	99.42	1232	0.58	212444	45108	67.70	21103	31.67	66211	99.37	418	0.63	66629
1975	14099	86.76	131	0.81	14230	87.57	2020	12.43	16250	28191	66.34	14294	33.64	42485	99.98	9	0.02	42494
1976	12118	95.31	337	2.65	12455	97.96	259	2.04	12714	2479	86.23	372	12.94	2851	99.17	24	0.83	2875
1977	52170	96.67	703	1.30	52873	97.98	1092	2.02	53965	10481	55.36	8234	43.49	18715	98.86	216	1.14	18931
1978	222863	97.20	1176	0.51	224039	97.71	5245	2.29	229284	10430	89.78	506	4.36	10936	94.14	681	5.86	11617
1979	178860	90.98	976	0.50	179836	91.48	16746	8.52	196582	10196	86.25	536	4.53	10732	90.78	1090	9.22	11822
1980	77195	63.99	2138	1.77	79333	65.76	41307	34.24	120640	36082	64.69	18013	32.29	54095	96.98	1685	3.02	55780
1981	57545	47.11	483	0.40	58028	47.50	64124	52.50	122152	5670	75.68	428	5.71	6098	81.39	1394	18.61	7492
1982	15422	66.92	213	0.92	15635	67.85	7409	32.15	23044	49098	95.38	1233	2.40	50331	97.78	1144	2.22	51475
1983[b]	288037	98.62	0	0.00	288037	98.62	10383	3.48	298420	8361	93.05	0	0.00	8361	93.05	474	6.05	8835
AVERAGE 1954-63	146874	50.53	579	1.06	147453	51.58	773	48.42	148226	33431	72.32	1026	17.69	34458	90.00	14	10.00	34472
1964-73	139561	53.46	1071	0.63	140632	54.09	1814	45.91	142446	85611	84.51	14352	15.40	99963	99.91	79	0.09	100042
1974-83	112809	84.07	659	0.91	113688	84.98	14982	16.03	128660	20409	78.06	6472	17.10	26881	95.18	714	4.85	27606

Table 8 (cont'd).

YEAR	CHINOOK SEINE Catch	CHINOOK SEINE % Of total	CHINOOK GILLNET Catch	CHINOOK GILLNET % Of total	CHINOOK NET Catch	CHINOOK NET % Of total	CHINOOK TROLL Catch	CHINOOK TROLL % Of total	CHINOOK TOTAL	TOTAL SALMON SEINE Catch	TOTAL SALMON SEINE % Of total	TOTAL SALMON GILLNET Catch	TOTAL SALMON GILLNET % Of total	TOTAL SALMON NET Catch	TOTAL SALMON NET % Of total	TOTAL SALMON TROLL Catch	TOTAL SALMON TROLL % Of total	TOTAL SALMON TOTAL
1954	8	0.28	0	0.00	8	0.28	2876	99.72	2884	1254054	99.54	1573	0.12	1255627	99.67	4215	0.33	1259842
1955	0	0.00	0	0.00	0	0.00	3071	100.00	3071	28100	83.58	1017	3.03	29117	86.61	4502	13.39	33619
1956	1	0.02	0	0.00	1	0.02	5304	99.98	5305	170688	95.57	388	0.22	171076	95.78	7529	4.22	178605
1957	0	0.00	0	0.00	0	0.00	3713	100.00	3713	15637	64.04	1305	5.34	16942	69.38	7477	30.62	24419
1958	0	0.00	4	0.21	4	0.21	1896	99.79	1900	185090	91.78	13123	6.51	198213	98.29	3445	1.71	201658
1959	0	0.00	1	0.04	1	0.04	2311	99.96	2312	12879	64.13	2576	12.83	15455	76.95	4629	23.05	20084
1960	5	0.28	0	0.00	5	0.28	1756	99.72	1761	166546	96.39	1781	1.03	168327	97.42	4464	2.58	172791
1961	0	0.00	2	0.17	2	0.17	1160	99.83	1162	3185	35.94	1288	14.54	4473	50.48	4388	49.52	8861
1962	0	0.00	0	0.00	0	0.00	3417	100.00	3417	1835	4.77	4272	11.10	6107	15.86	32390	84.14	38497
1963	0	0.00	233	6.35	233	6.35	3436	93.65	3669	0	0.00	3437	13.25	3437	13.25	22494	86.75	25931
1964	1	0.02	2	0.04	3	0.06	5189	99.94	5192	189435	77.47	29543	12.08	218978	89.55	25554	10.45	244532
1965	11	0.14	13	0.17	24	0.31	7646	99.69	7670	76052	65.42	21558	18.55	97610	83.97	18634	16.03	116244
1966	0	0.00	2	0.01	2	0.01	13623	99.99	13625	254548	86.31	7674	2.60	262222	88.91	32696	11.09	294918
1967	0	0.00	2	0.02	2	0.02	9048	99.98	9050	40874	52.94	12937	16.76	53811	69.70	23393	30.30	77204
1968	32	0.75	1	0.02	33	0.77	4239	99.23	4272	281771	89.72	15207	4.84	296978	94.56	17082	5.44	314060
1969	6	0.04	64	0.46	70	0.50	13868	99.50	13938	64875	65.59	9606	9.71	74481	75.30	24425	24.70	98906
1970	5	0.06	40	0.46	45	0.51	8698	99.49	8743	491997	90.96	27567	5.10	519564	96.06	21327	3.94	540891
1971	7	0.03	11	0.05	18	0.09	20469	99.91	20487	82308	68.61	5427	4.52	87735	73.14	32222	26.86	119957
1972	144	1.05	15	0.11	159	1.16	13599	98.84	13758	749365	92.70	31783	3.93	781148	96.63	27242	3.37	808390
1973	9	0.17	4	0.07	13	0.24	5383	99.76	5396	55249	70.33	12826	16.33	68075	86.66	10477	13.34	78552
1974	795	3.79	5	0.02	800	3.81	20191	96.19	20991	280354	82.48	23043	6.78	303397	89.26	36522	10.74	339919
1975	778	4.39	72	0.41	850	4.80	16857	95.20	17707	51797	56.46	17134	18.68	68931	75.14	22811	24.86	91742
1976	1900	7.45	43	0.17	1943	7.62	23561	92.38	25504	25321	40.73	1727	2.78	27048	43.51	35115	56.49	62163
1977	21723	50.24	47	0.11	21770	50.34	21472	49.66	43242	131250	77.87	9586	5.69	140836	83.56	27718	16.44	168554
1978	9283	26.21	27	0.08	9310	26.28	26114	73.72	35424	260371	79.17	3365	1.02	263736	80.19	65137	19.81	328873
1979	23032	45.33	12	0.02	23044	45.35	27769	54.65	50813	416992	84.79	2702	0.55	419694	85.34	72093	14.66	491787
1980	10864	22.93	268	0.57	11132	23.49	36254	76.51	47386	165553	49.58	23709	7.10	189262	56.67	144681	43.33	333943
1981	8814	19.69	26	0.06	8840	19.75	35920	80.25	44760	135683	46.40	1774	0.61	137457	47.00	154989	53.00	292446
1982	4250	9.52	1	0.00	4251	9.52	40384	90.48	44635	82035	46.45	2293	1.30	84328	47.75	92289	52.25	176617
1983[b]	3698	21.48	0	0.00	3698	21.48	13516	78.52	17214	503019	91.14	0	0.00	503019	91.14	48020	8.86	551039
AVERAGE 1954-63	1	0.06	24	0.68	25	0.74	2894	99.26	2919	183801	63.57	3076	6.80	186877	70.37	9553	29.63	196431
1964-73	22	0.23	15	0.14	37	0.37	10176	99.63	10213	228647	76.01	17413	9.44	246060	85.45	23305	14.55	269365
1974-83	8514	21.10	50	0.14	8564	21.24	26204	78.76	34768	206238	65.61	8533	4.45	213771	69.98	70028	30.04	283799

[a] From B.C. Catch Statistics.

[b] Preliminary catch estimates based on sales slips.

record and surpassed the 1974 to 1983 Area 2W catch average by 259% (Table 8). Similarly, the 1983 pink catch estimate of 288,037 was the highest odd-year catch on record and surpassed the 1974 to 1983 catch average by 155% (Table 8); in addition, it was the largest pink catch in that time period, which included substantial even-year fisheries on local Queen Charlotte Islands stocks (Table 8). For the remaining species, no increases were experienced in the 1983 net catch estimates relative to the 1974 to 1983 catch averages; the coho net catch was approximately half the previous 10-year average, while chum and chinook catches were down by 76% and 59% respectively (Table 8).

Salmon catch breakdowns by gear indicated a 26% increase in the seine catch component of the 1983 catch compared to the 1974 to 1983 mean seine catch percent (Table 8). No gillnet effort was expended in Area 2W in 1983.

The annual fishing effort in Area 2W from 1954 to 1983 as indicated by seasonal gear levels, number of fishing days and mean weekly effort is presented in Table 9. Preliminary 1983 data on seasonal gear levels in Area 2W indicated 93 seines and 0 gillnets which was well below the 1974 to 1983 averages of 190 seines and 85 gillnets. Similarly, the number of fishing days in 1983 was well below the previous 10-year average. The mean weekly seine effort in 1983 was nearly equal to the 1974 to 1983 average, while the total lack of gillnet effort was the first since 1954 (Table 9).

ESCAPEMENTS, AREA 2W

The annual salmon escapements to Area 2W by species for the period 1947 to 1983 are presented in Table 10. The 1983 chum escapement of 32,169 was only 16% of the optimum level and 62% of the previous 10-year average. The 1983 escapements for sockeye, coho and pink salmon were 3,658, 795 and 516 respectively and were similar to the previous 10-year averages. As was forecast, the Area 2W stocks were insufficient to warrant any commercial fisheries and the majority of the 1983 catch in Area 2W was comprised of migrating stocks.

REVIEW OF PAST AND PRESENT FISHERIES, AREA 2W

Assessment of the Area 2W salmon interception net fisheries in terms of historical catch trends, comparison between the pre-season and actual fishing strategies, stock composition, management, and fleet control is provided in the following section.

Since 1954, when catches were first separately recorded for the east and west coasts of the Queen Charlotte Islands, the occurrence of sockeye catches in Area 2W ranged from early June to as late as early October in some years. During the first 20 years of these records, sockeye catches were mostly limited to the mid-June to early July period corresponding to the near shore migration and escapement of Area 2W sockeye stocks. These were composed of two small populations located in Mercer and Fairfax creeks with escapements averaging less than 5,000 in each stream. Fisheries on Mercer Creek sockeye occurred in Athlow Bay while Fairfax Creek sockeye were harvested in Tasu Sound (Fig. 3). Seasonal net catches ranged from less than 50 to 6,500 sockeye. The gillnet component of the total Area 2W sockeye catch during this time period was quite high, averaging 73% with an average

Table 9. Annual salmon fishing effort by gear, Area 2W, 1954-1983.

YEAR	NO. GEAR			NO. DAYS FISHING		MEAN EFFORT/ WEEK FISHING[a]		
	Seine	Gillnet	Troll	Seine	Gillnet	Seine	Gillnet	Troll
1954	778	5	221	26	7	97.5	1.5	14.5
1955	87	14	362	13	8	29	7	17.5
1956	235	10	386	30	10	39.5	3.5	24
1957	15	4	542	30	10	4	2	45
1958	117	117	220	12	32	39	14.5	14.5
1959	14	52	289	9	24	7	10.5	17
1960	178	32	306	16	18	44.5	8	48
1961	7	42	383	2	1	7	10.5	191.5
1962	1	34	853	5	10	1	3.5	42.5
1963	0	38	747	0	16	0	2.5	34
1964	155	160	698	12	19	39.5	26.5	58
1965	99	183	1082	10	18	33	36.5	54
1966	167	56	1064	15	33	24.5	3.5	19.5
1967	57	108	1406	11	27	19.5	13.5	94
1968	145	105	703	26	34	18	7.5	10.5
1969	67	72	1417		31	37.5	20	56.5
1970	328	191	1137	35	16	47	36	17
1971	100	53	1767	10	30	25	9	93
1972	369	340	1495	30	44	52.5	15.5	62.5
1973	108	144	736	4	16	54	7.5	41
1974	274	276	1338	23	30	30.5	19.5	67
1975	152	191	1574	22	22	35.5	34	78.5
1976	75	36	1733	22	22	10.5	6	72
1977	304	115	1976	28	10	27	23	79
1978	138	15	2766	22	14	15.5	2.5	131.5
1979	410	24	2583	24	17	45.5	4	103.5
1980	240	164	6918	20	18	34	16	216
1981	110	10	7398	14	8	12	1.5	321.5
1982	99	16	6201	6	1	16.5	5.5	289.5
1983[b]	93	0	N/A[c]	9	0	23.5	0	N/A
AVG. 1954-83	143	85	421	13	15	26	8	34
1964-73	156	131	1151	14	24	34	19	54
1974-83	190	85	3610	20	13	23	16	144

[a] Total No. gear/No. weeks fishing.
[b] Preliminary effort estimates.
[c] Not available at time of printing.

Table 10. Annual spawning escapements for sockeye, coho, chum and pink, Area 2W, 1947-1983.

YEAR	SOCKEYE	COHO	CHUM	PINK	
1947	NA[a]	525	178425	400	
1948	3500	1732	339025	31700	
1949	NA	1425	168965	850	
1950	5000	3445	385200	193800	
1951	3900	13650	364075	5950	
1952	NA	6255	360375	639500	
1953	1150	1779	81575	1625	
1954	1150	5300	191350	381000	
1955	400	1775	11425	800	
1956	3500	600	24125	119625	
1957	NA	11150	144550	1625	
1958	7500	1375	65000	131525	
1959	5000	810	21649	6270	
1960	6300	6000	31762	146250	
1961	5500	3670	88625	8050	
1962	3900	16650	52350	80075	
1963	7700	1215	70375	3700	
1964	3000	10500	221775	56325	
1965	9000	4475	54725	35475	
1966	9000	17275	134475	225375	
1967	7800	6682	104806	6099	
1968	8500	4430	119191	148770	
1969	15000	4110	79500	6025	
1970	4500	3650	133725	299625	
1971	4500	696	78476	NA	
1972	5050	2550	142500	310800	
1973	5400	271	49950	NA	
1974	3000	835	53823	147875	
1975	1025	350	28751	352	
1976	1856	648	31579	47971	
1977	1201	635	49721	125	
1978	4053	1054	38145	155413	
1979	4452	851	49609	601	
1980	3050	965	89705	164976	
1981	4560	1952	47938	457	
1982	3831	856	93465	112492	
1983	3658	795	32169	516	
				ODD-YEAR	EVEN-YEAR
AVG 1947-63	4193	4852	159349	3374	214337
1964-73	7175	5464	111812	15833	208179
1974-83	3069	894	51430	410	145745

[a]Not available.

annual catch level of 1,425 sockeye (Table 8). Fishing was concentrated in the sheltered bays where the seasonal average weekly effort of gillnets amounted to 14 boats. The management of the area was not well defined: it appeared that the west coast waters of the Charlottes were typically open to salmon fishing until conservation concerns warranted partial or complete closure.

In 1974, sockeye catches escalated to 15 times the previous 20-year catch average as seine vessels successfully explored outer areas of the west coast for fishing opportunities (Table 8). It soon became apparent that passing salmon stocks could be exploited in Area 2W; thenceforth, the Rennell Sound interception fishery developed in an opportunistic manner with little policy or management on the part of DFO. In 1979, seine catches on passing stocks peaked at 180,000 sockeye, 179,000 pink, 23,000 chinook, and 25,000 coho salmon (Table 8). Previous high catches by species for seines were: 43,000 sockeye, 53,000 odd-year pink, 22,000 chinook, and 15,000 coho, the former three of which were taken during the post-1974 interception period. Prior to that, seine catches averaged only 700 sockeye, 1,400 pink, 18 chinook and 2,800 coho.

Following the 1977 and 1979 peak seine chinook catches which represented almost half the total annual Area 2W chinook catch, gear allocation disputes arose among trollers who had traditionally been responsible for virtually the entire Area 2W chinook catch (Kadowaki 1979). Chinook conservation concerns became equally apparent at that time and a Departmental policy gradually evolved to limit certain interception net fisheries along the B.C. coast to 2 days/week as an initial means of controlling the accelerated exploitation of mixed stocks. In 1982, a 5,000 piece catch limit was placed on chinook in the Area 2W net fishery for conservation of natural chinook stocks. Trollers, however, continued to increase their catch of chinook despite management actions initiated that year in the form of a two-week North Coast troll closure.

Assessment of 1983 salmon fishery, Area 2W

In 1983, the 5,000 chinook catch limit was maintained in the Rennell Sound interception net fishery despite record catches of sockeye and odd-year pink salmon. The pre-season management option to limit this fishery to peak sockeye and pink interception weeks appeared to work well in terms of minimizing chinook interceptions (Dept. Fisheries and Oceans 1983). However, low chinook catches may also have been due to an observed low chinook abundance that year and their unavailability to seine gear under the warmer water conditions encountered in 1983. Although a policy limiting interception net fisheries to 2 days/week had been established in previous years, in 1983 additional fishing days were permitted in peak weeks because of the low incidence of chinook in the catch and relatively good catches of pink and sockeye.

Stock composition through scale analysis of the Area 2W sockeye catch indicated the following weekly Fraser River sockeye component: July 24-27, 75%; August 1, 92%; and August 8, 100% (J. Woodey, IPSFC, pers. comm.). Although pink salmon were not sampled in 1983, scale samples collected in Area 2W in 1979 indicated a high Fraser River component as well as other non-

Skeena stocks in the catch (J. Woodey, IPSFC, pers. comm.). Additionally, the highest odd-year pink catch of 1983 in Area 2W corresponded to a high Fraser River pink salmon return of 14.6 million. While the 1979, 1981 and 1983 Fraser River pink salmon stocks have been the largest since 1947, peak odd-year catches occurred in Area 2W in only two of those years. Although differences could not be explained by variable effort, factors influencing the catch may have included the distribution and migration routes of salmon off the west coast of the Queen Charlottes. The 1983 predictions that the warmer waters of the El Nino might influence migrating salmon to "landfall" further north signified that higher catches might be anticipated in Area 2W, especially of Fraser River salmon bound for Johnstone Strait (Orman 1983). Correspondingly, estimates of the 1983 diversion rate of Fraser salmon through Johnstone Strait were unusually high at 85% for sockeye and 64% for pinks (J. Woodey, IPSFC, pers. comm.).

In terms of stock management, no apparent conservation problems arose from the record sockeye and odd-year pink catches in Area 2W in 1983. The essentially Fraser River sockeye component was derived from a stock size of 5.2 million, the largest return on cycle since 1951. An estimated exploitation rate of just over 3.5% was exerted in Area 2W on the predominant age 4_2 sockeye originating chiefly from the Chilco and Adams rivers. Although the stock composition of the Area 2W pink catch was less well-defined, the exploitation rate on an assumed 100% Fraser River component would have been less than 2 %.

In terms of fleet management, Area 2W openings were synchronized with fisheries in one or more of Areas 1, 3, 4, 5 and 6. Gear levels were consequently moderate and CPUE was relatively high. Because of the unusual warm water conditions in 1983 and the possible effect this may have had on the migration routes and timing of salmon, it will be necessary to closely monitor this fishery to determine if species catch mix and origin change.

AREA 2E

1983 PRE-SEASON FISHING PATTERN

As in Areas 1 and 2W, no net fisheries were anticipated on local stocks in Area 2E as escapements were expected to be less than optimum for all salmon species (Append. 3).

1983 WEEKLY FISHING SUMMARY, AREA 2E

As expected in the pre-season fishing plans, no net fisheries were held in Area 2E due to the low stock abundance of local chum salmon and the off-cycle year for pink salmon. By comparison, the 1954 to 1982 catch data by gear for Area 2E (Table 11) and the historical effort data (Table 12) showed that during the preceeding 29 years, net fisheries were lacking in the area in 1979 only.

ESCAPEMENTS, AREA 2E

The annual salmon escapements to Area 2E by species for the period 1947 to 1983 are presented in Table 13. The 1983 escapements for sockeye (9,000)

SOCKEYE

YEAR	SEINE Catch	SEINE % Of total	GILLNET Catch	GILLNET % Of total	NET Catch	NET % Of total	TROLL Catch	TROLL % Of total	TOTAL
1954	33	60.00	21	38.18	54	98.18	1	1.82	55
1955	2665	99.89	0	0.00	2665	99.89	3	0.11	2668
1956	9	81.82	1	9.09	10	90.91	1	9.09	11
1957	3	20.00	0	0.00	3	20.00	12	80.00	15
1958	5	14.71	1	2.94	6	17.65	28	82.35	34
1959	0	0.00	454	87.64	454	87.64	64	12.36	518
1960	11	61.11	6	33.33	17	94.44	1	5.56	18
1961	2	66.67	0	0.00	2	66.67	1	33.33	3
1962	38	28.57	86	64.66	124	93.23	9	6.77	133
1963	1	0.61	141	85.98	142	86.59	22	13.41	164
1964	63	10.48	527	87.69	590	98.17	11	1.83	601
1965	16	1.89	794	93.96	810	95.86	35	4.14	845
1966	7	2.71	160	62.02	167	64.73	91	35.27	258
1967	8	0.68	878	75.17	886	75.86	282	24.14	1168
1968	10	8.40	31	26.05	41	34.45	78	65.55	119
1969	0	0.00	132	72.53	132	72.53	50	27.47	182
1970	26	2.67	185	18.99	211	21.66	763	78.34	974
1971	8	1.00	558	69.66	566	70.66	235	29.34	801
1972	104	16.33	29	4.55	133	20.88	504	79.12	637
1973	524	71.58	130	17.76	654	89.34	78	10.66	732
1974	3070	51.74	473	7.97	3543	59.72	2390	40.28	5933
1975	942	71.74	311	23.69	1253	95.43	60	4.57	1313
1976	1209	51.62	930	39.71	2139	91.33	203	8.67	2342
1977	15	1.18	835	65.85	850	67.03	418	32.97	1268
1978	60	1.75	85	2.48	145	4.22	3289	95.78	3434
1979	0	0.00	0	0.00	0	0.00	645	100.00	645
1980	4580	91.67	143	2.86	4723	94.54	273	5.46	4996
1981	175	1.48	719	6.09	894	7.58	10906	92.42	11800
1982	3	0.22	1	0.07	4	0.30	1348	99.70	1352
1983[b]	0	0.00	0	0.00	0	0.00	717	100.00	717
AVERAGE 1954-63	277	43	71	32	348	76	14	24	362
1964-73	77	12	342	53	419	64	213	36	632
1974-83	1005	27	350	15	1355	42	2025	58	3380

COHO

YEAR	SEINE Catch	SEINE % Of total	GILLNET Catch	GILLNET % Of total	NET Catch	NET % Of total	TROLL Catch	TROLL % Of total	TOTAL
1954	18436	41.51	2371	5.34	18436	41.51	25981	58.49	44417
1955	12550	15.48	2178	2.69	12550	15.48	68525	84.52	81075
1956	13252	11.63	1986	1.74	9982	8.76	103948	91.24	113930
1957	3239	2.81	137	0.12	3239	2.81	111935	97.19	115164
1958	3805	6.39	2184	3.67	3805	6.39	55729	93.61	59534
1959	786	1.45	4	0.01	786	1.45	53583	98.55	54369
1960	2508	3.54	562	0.79	2508	3.54	68328	96.46	70834
1961	10267	12.03	2690	3.06	10267	12.03	77276	87.97	87843
1962	8969	7.69	4739	4.07	8969	7.69	107605	92.31	116574
1963	9338	9.42	5105	5.15	9338	9.42	89801	90.58	99139
1964	16119	10.69	10229	6.79	16119	10.69	134608	89.31	150727
1965	7688	10.17	5859	7.75	7688	10.17	67888	89.83	75576
1966	6994	4.26	2862	1.74	6994	4.26	157061	95.74	164055
1967	10955	12.71	11546	13.39	10955	12.71	75261	87.29	86216
1968	7140	5.30	14373	10.68	7140	5.30	127487	94.70	134627
1969	966	1.67	5074	8.78	966	1.67	56824	98.33	57790
1970	5583	5.64	16825	17.01	4776	4.83	94126	95.17	98902
1971	5344	4.71	13800	12.15	4196	3.70	109355	96.30	113551
1972	4662	3.84	6427	5.30	4662	3.84	116698	96.16	121360
1973	1931	2.06	7338	7.83	1931	2.06	91813	97.94	93744
1974	1591	1.58	3990	3.97	1591	1.58	99037	98.42	100628
1975	274	0.49	183	0.33	274	0.49	55914	99.51	56188
1976	7071	3.56	2535	1.28	7071	3.56	191451	96.44	198522
1977	5560	13.06	5299	12.45	5560	13.06	37010	86.94	42570
1978	1705	1.17	8202	5.65	1705	1.17	143531	98.83	145236
1979	0	0.00	0	0.00	0	0.00	105944	100.00	105944
1980	1107	1.04	4808	4.51	1107	1.04	105438	98.96	106545
1981	117	0.12	679	0.67	117	0.12	100638	99.88	100755
1982	488	0.73	3163	4.72	488	0.73	66520	99.27	67008
1983[b]	0	0.00	0	0.00	0	0.00	105212	100.00	105212
AVERAGE 1954-63	8345	11	2196	3	8018	11	76270	89	84288
1964-73	6738	6	9433	9	6543	6	103112	94	109655
1974-83	1791	2	2886	3	1791	2	101070	98	102861

PINK

YEAR	SEINE Catch	SEINE % Of total	GILLNET Catch	GILLNET % Of total	NET Catch	NET % Of total	TROLL Catch	TROLL % Of tota	TOTAL
1954	319764	98.13	5545	1.70	325309	99.83	538	0.17	325847
1955	25681	96.68	317	1.19	25998	97.87	566	2.13	26564
1956	152858	98.11	1008	0.65	153866	98.76	1933	1.24	155799
1957	127562	98.43	17	0.01	127579	98.44	2022	1.56	129601
1958	413325	97.13	11017	2.59	424342	99.72	1181	0.28	425523
1959	4340	56.34	388	5.04	4728	61.38	2975	38.62	7703
1960	189119	95.99	6868	3.49	195987	99.48	1033	0.52	197020
1961	15807	85.99	445	2.42	16252	88.41	2131	11.59	18383
1962	789442	92.69	54162	6.36	843604	99.05	8121	0.95	851725
1963	2	0.04	2	0.04	4	0.07	5642	99.93	5646
1964	32932	63.08	4723	9.05	37655	72.13	14552	27.87	52207
1965	94	3.22	122	4.18	216	7.40	2703	92.60	2919
1966	275226	90.06	171	0.06	275397	90.12	30205	9.88	305602
1967	2140	15.13	534	3.78	2674	18.91	11469	81.09	14143
1968	471832	91.14	12723	2.46	484555	93.60	33126	6.40	517681
1969	23243	82.27	2489	8.81	25732	91.08	2519	8.92	28251
1970	532090	87.64	45416	7.48	577506	95.12	29599	4.88	607105
1971	296	7.21	444	10.81	740	18.01	3368	81.99	4108
1972	364437	90.96	11883	2.97	376320	93.93	24321	6.07	400641
1973	282	7.10	170	4.28	452	11.37	3522	88.63	3974
1974	218890	96.80	2664	1.18	221554	97.98	4579	2.02	226133
1975	5440	63.69	224	2.62	5664	66.31	2878	33.69	8542
1976	1607072	98.70	16335	1.00	1623407	99.70	4852	0.30	1628259
1977	1459	15.08	1508	15.58	2967	30.66	6710	69.34	9677
1978	234993	93.93	2453	0.98	237446	94.91	12732	5.09	250178
1979	0	0.00	0	0.00	0	0.00	26041	100.00	26041
1980	803	2.34	200	0.58	1003	2.93	33261	97.07	34264
1981	864	4.44	43	0.22	907	4.67	18535	95.33	19442
1982	103	0.26	81	0.20	184	0.46	39662	99.54	39846
1983[b]	0	0.00	0	0.00	0	0.00	32368	100.00	32368
AVERAGE 1954-63	203790	82	7977	2	211767	84	2614	16	214381
1964-73	170257	54	7868	5	178125	59	15538	41	193663
1974-83	206962	38	2351	2	209313	40	18182	60	227476

CHUM

YEAR	SEINE Catch	SEINE % Of total	GILLNET Catch	GILLNET % Of total	NET Catch	NET % Of total	TROLL Catch	TROLL % Of total	TOTAL
1954	292031	88.76	36923	11.22	328954	99.98	55	0.02	329009
1955	36060	65.08	19336	34.90	55396	99.98	10	0.02	55406
1956	31546	66.60	15783	33.32	47329	99.92	40	0.08	47369
1957	9055	42.29	12310	57.49	21365	99.78	47	0.22	21412
1958	13027	82.52	2727	17.27	15754	99.80	32	0.20	15786
1959	0	0.00	6	28.57	6	28.57	15	71.43	21
1960	2744	85.86	444	13.89	3188	99.75	8	0.25	3196
1961	36655	55.29	29545	44.56	66200	99.85	100	0.15	66300
1962	47355	44.39	59277	55.56	106632	99.95	58	0.05	106690
1963	64454	46.03	75448	53.88	139902	99.90	134	0.10	140036
1964	292350	51.30	277226	48.64	569576	99.94	330	0.06	569906
1965	26471	34.75	49458	64.93	75929	99.68	241	0.32	76170
1966	85484	64.41	46870	35.32	132354	99.73	359	0.27	132713
1967	145423	37.12	246249	62.86	391672	99.98	97	0.02	391769
1968	163373	28.65	406659	71.33	570032	99.98	109	0.02	570141
1969	7243	14.22	43393	85.21	50636	99.44	287	0.56	50923
1970	104565	28.65	259085	70.98	363650	99.63	1356	0.37	365006
1971	91375	30.13	210764	69.50	302139	99.64	1106	0.36	303245
1972	76135	27.01	205353	72.85	281488	99.86	383	0.14	281871
1973	186468	43.28	244129	56.67	430597	99.95	216	0.05	430813
1974	17171	11.41	132786	88.26	149957	99.68	486	0.32	150443
1975	214	9.61	1729	77.67	1943	87.29	283	12.71	2226
1976	18776	39.29	28939	60.56	47715	99.85	70	0.15	47785
1977	57358	33.47	113463	66.20	170821	99.67	571	0.33	171392
1978	25794	22.21	89445	77.00	115239	99.21	920	0.79	116159
1979	0	0.00	0	0.00	0	0.00	1059	100.00	1059
1980	23559	19.83	94451	79.49	118010	99.31	815	0.69	118825
1981	10759	35.92	18492	61.74	29251	97.66	702	2.34	29953
1982	2559	6.82	34215	91.24	36774	98.07	725	1.93	37499
1983[b]	0	0.00	0	0.00	0	0.00	838	100.00	838
AVERAGE 1954-63	53293	58	25180	35	78473	93	30	7	78523
1964-73	117869	36	198919	64	316807	100	448	0	317256
1974-83	15619	18	51352	60	66971	78	647	22	67618

Table 11 (cont'd).

YEAR	CHINOOK									TOTAL SALMON								
	SEINE		GILLNET		NET		TROLL		TOTAL	SEINE		GILLNET		NET		TROLL		TOTAL
	Catch	% Of total	Catch	% Of total	Catch	% Of total	Catch	% Of total		Catch	% Of total	Catch	% Of total	Catch	% Of total	Catch	% Of total	
1954	0	0.00	3	0.07	3	0.07	4099	99.93	4102	630264	89.30	44863	6.36	675127	95.65	30674	4.35	705801
1955	0	0.00	0	0.00	0	0.00	3304	100.00	3304	76956	44.95	21831	12.75	98787	57.70	72408	42.30	171195
1956	2	0.02	38	0.44	40	0.46	8602	99.54	8642	197667	59.72	18816	5.68	216483	65.40	114524	34.60	331007
1957	1	0.01	0	0.00	1	0.01	8466	99.99	8467	139860	50.90	12464	4.54	152324	55.43	122472	44.57	274796
1958	0	0.00	0	0.00	0	0.00	8332	100.00	8332	430162	84.12	15929	3.11	446091	87.23	65302	12.77	511393
1959	0	0.00	2	0.02	2	0.02	10950	99.98	10952	5126	6.97	854	1.16	5980	8.13	67587	91.87	73567
1960	0	0.00	0	0.00	0	0.00	10145	100.00	10145	194382	68.98	7880	2.80	202262	71.78	79513	28.22	281775
1961	4	0.06	0	0.00	4	0.06	6886	99.94	6890	63035	34.61	32680	17.95	95715	52.56	86394	47.44	182109
1962	1	0.01	5	0.06	6	0.08	7733	99.92	7739	845805	77.77	118269	10.87	964074	88.64	123526	11.36	1087600
1963	66	0.90	19	0.26	85	1.16	7255	98.84	7340	73861	28.69	80715	31.37	154576	60.05	102854	39.95	257430
1964	18	0.35	89	1.74	107	2.09	5008	97.91	5115	341482	43.29	292794	37.12	634276	80.41	154509	19.59	788785
1965	19	0.17	94	0.86	113	1.03	10825	98.97	10938	34288	19.90	56327	32.69	90615	52.59	81692	47.41	172307
1966	68	0.55	11	0.09	79	0.64	12303	99.36	12382	367779	59.52	50074	8.10	417853	67.63	200019	32.37	617872
1967	27	0.21	300	2.37	327	2.58	12346	97.42	12673	158553	30.64	259507	50.14	418060	80.78	99455	19.22	517515
1968	19	0.15	438	3.41	457	3.56	12382	96.44	12839	642374	51.40	434224	34.74	1076598	86.14	173182	13.86	1249780
1969	0	0.00	76	0.26	76	0.26	28607	99.74	28683	31452	18.40	51164	29.94	82616	48.34	88287	51.66	170903
1970	59	0.27	312	1.40	371	1.67	21859	98.33	22230	642323	57.77	321823	28.94	964146	86.72	147703	13.28	1111849
1971	13	0.04	497	1.49	510	1.52	32948	98.48	33458	97036	20.64	226063	48.09	323099	68.73	147012	31.27	470111
1972	40	0.10	331	0.81	371	0.91	40479	99.09	40850	445378	52.29	224023	26.30	669401	78.59	182385	21.41	851786
1973	37	0.11	108	0.31	145	0.42	34647	99.58	34792	189242	33.12	251875	44.08	441117	77.20	130276	22.80	571393
1974	34	0.07	374	0.79	408	0.86	47016	99.14	47424	240756	45.04	140287	26.24	381043	71.28	153508	28.72	534551
1975	162	0.37	4	0.01	166	0.38	43771	99.62	43937	7032	6.26	2451	2.18	9483	8.44	102906	91.56	112389
1976	370	0.55	69	0.10	447	0.65	68377	99.35	68824	1634506	83.90	48808	2.51	1683314	86.40	264953	13.60	1948267
1977	113	0.30	218	0.58	331	0.88	37163	99.12	37494	64505	24.10	121323	45.32	185828	69.42	81872	30.58	267700
1978	443	1.29	18	0.05	461	1.35	33758	98.65	34219	262995	47.18	100203	17.98	363198	65.16	194230	34.84	557428
1979	0	0.00	0	0.00	0	0.00	39327	100.00	39327	0	0.00	0	0.00	0	0.00	173016	100.00	173016
1980	125	0.35	34	0.10	159	0.45	35265	99.55	35424	30174	9.90	99636	32.68	129810	42.58	175052	57.42	304862
1981	10	0.04	95	0.39	105	0.43	24080	99.57	24185	11925	6.38	20028	10.72	31953	17.10	154861	82.90	186814
1982	4	0.01	1	0.00	5	0.02	31512	99.98	31517	3157	1.75	37461	20.77	40618	22.52	139767	77.48	180385
1983[b]	0	0.00	0	0.00	0	0.00	18267	100.00	18267	0	0.00	0	0.00	0	0.00	167302	100.00	167302
AVERAGE 1954-63	7	0	7	0	14	0	7577	100	7591	265712	55	35430	10	301142	64	86525	36	387667
1964-73	30	0	226	1	256	1	21140	99	21396	294991	39	216787	34	511778	73	140452	27	652230
1974-83	127	0	81	0	208	1	37853	99	38081	225505	22	57020	16	282525	38	169768	62	442281

[a] From B.C. Catch Statistics.

[b] Preliminary catch estimates based on sales slips.

Table 12. Annual salmon fishing effort by gear, Area 2E, 1954-1983.

YEAR	NO. GEAR			NO. DAYS FISHING		MEAN EFFORT/ WEEK FISHING[a]		
	Seine	Gillnet	Troll	Seine	Gillnet	Seine	Gillnet	Troll
[illegible]54	[illegible]	875	1039	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1955	[illegible]	[illegible]	1557	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1956	213	320	1864	21	31	35.5	64	[illegible]
1957	115	93	2108	30	15	16.5	[illegible]	[illegible]
1958	219	79	1701	26	21	36.5	[illegible]	[illegible]
1959	16	14	1405	20	10	4	[illegible]	[illegible]
1960	196	70	2436	24	13	32.5	14	[illegible]
1961	244	268	2047	21	10	40.5	[illegible]	[illegible]
1962	467	897	2019	23	28	78	[illegible]	[illegible]
1963	378	963	2413	20	26	114	74	[illegible]
1964	703	2571	2484	27	53	90.5	[illegible]	[illegible]
1965	361	1015	2539	3	19	361	[illegible]	[illegible]
1966	284	335	2525	18	26	57	[illegible]	[illegible]
1967	572	2994	2218	12	12	[illegible]	[illegible]	[illegible]
1968	622	3864	2607	31	40	69	[illegible]	[illegible]
1969	46	813	3385	6	[illegible]	[illegible]	[illegible]	[illegible]
1970	480	2916	3854	32	31	60	[illegible]	[illegible]
1971	256	2241	3749	17	49	[illegible]	[illegible]	[illegible]
1972	345	2121	4376	18	30	49.5	[illegible]	[illegible]
1973	360	1940	3751	8	20	120	[illegible]	[illegible]
1974	212	2128	3471	21	29	[illegible]	[illegible]	[illegible]
1975	12	45	3727	12	20	6	[illegible]	[illegible]
1976	576	417	5559	29	25	[illegible]	[illegible]	[illegible]
1977	307	1883	3760	12	24	77	269	139
1978	98	955	4123	16	20	16.5	119.5	[illegible]
1979	0	0	3991	0	0	0	0	[illegible]
1980	57	834	6277	6.5	6.5	19	[illegible]	[illegible]
1981	18	381	5305	4	4	[illegible]	[illegible]	[illegible]
1982	14	149	4567	1	1	7	[illegible]	[illegible]
1983	0	0	N.A.[b]	0	0	0	0	N.A.
[illegible] 1954-63	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1964-73	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1974-83	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[a]Total No. gear/No. weeks fishing.
[b]Not available at time of printing.

Table 13. Annual spawning escapements for sockeye, coho, chum and pink, Area 2E, 1947-1983.

YEAR	SOCKEYE	COHO	CHUM	PINK	
1947	40[illegible]	95400	370350	45275	
1948	7725	43425	68250	516525	
1949	3725	45901	39500	51650	
1950	6425	44894	416500	359725	
1951	15300	115628	414350	29775	
1952	3500	75900	300550	296550	
1953	15225	21650	142900	25775	
1954	35025	58850	291400	406725	
1955	7500	40460	35925	23275	
1956	15000	38600	105700	262600	
1957	35000	46375	153375	46275	
1958	NA[a]	33950	186975	192750	
1959	300	49275	27743	25275	
1960	15200	59522	181543	370643	
1961	15075	105175	178975	42325	
1962	35000	56100	309725	636600	
1963	30000	59179	254508	115400	
1964	15000	101350	429980	146595	
1965	20000	54360	227900	45550	
1966	25000	135475	372137	509400	
1967	27000	68700	210675	71950	
1968	42500	43480	294[illegible]	70[illegible]45	
1969	38525	54650	1[illegible]2[illegible]5	120425	
1970	23500	66250	136975	6[illegible]360	
1971	20000	19304	221400	26700	
1972	8000	47475	157205	7[illegible]6950	
1973	15000	48650	225725	34225	
1974	8000	16630	121910	4[illegible]237[illegible]	
1975	20093	58570	73732	20365	
1976	11000	55625	139000	649900	
1977	10050	37025	159825	8580	
1978	6000	59585	210152	551000	
1979	3000	28387	43158	17788	
1980	5667	24626	160520	305[illegible]12	
1981	3000	26544	154934	9417	
1982	1850	37059	201656	186796	
1983	9000	28660	156060	13245	

				ODD-YEAR	EVEN-YEAR
AVG 1947-83	15545	58252	206151	42556	404040
1964-[illegible]	22953	67941	260466	59770	[illegible]0130
1974-83	7765	37300	143[illegible]92	13879	415016

[a]Not available.

and coho (28,660) were below the optimum levels; coho escapement was also below the previous 10-year average by 33%. The 1983 chum escapement of 156,080 was only 39% of the optimum level but was similar to the previous 10-year average of 143,092. The 1983 pink escapement of 13,245 was similar to the previous 10 odd-year average.

1983 TROLL FISHERY, NORTH COAST

The 1983 troll fishery proposals were less settled than the net fishing proposals, being subject to the outcome of the Canada-U.S. salmon negotiations. In the event of a Salmon Agreement, the northern troll fishery, comprised of Statistical Areas 1 through 11, was to have reduced its chinook catch by approximately 50,000 pieces. This would have entailed a 4-to-8 week closure in the otherwise continuous 7 days/week fishery commencing April 15 for chinook and July 1 for coho and lasting until September 30.

Salmon trolling commenced in North Coast waters (Areas 1-11) on April 15 for chinook and July 1 for coho for 7 days/week until September 30. The Canada-U.S. salmon negotiations did not result in a salmon agreement; chinook conservation measures were limited to the 1982 two-week closure in the northern troll fishery from June 17 to 30. The preliminary 1983 troll catch estimate for combined Areas 1, 2W and 2F of 130,000 chinook was slightly below the 1974 to 1983 catch average of 138,000 chinook (Tables 3, 8 and 11).

ACKNOWLEDGEMENTS

The authors wish to acknowledge C. Dragseth, L. Enderud and J. Kozak of the Queen Charlotte Islands Fisheries Office for providing information and comments on the report; and E. Kremer, Northern Operations Director of Prince Rupert, for his records of the in-season management of north coast fisheries, specifically for Areas 1 and 2W. Conversations with D. Schutz helped to clarify the development of the Area 2W interception fishery. Special appreciation is expressed to A.Y. Fedorenko for critically reviewing the report and preparing it for publication. Thanks are also extended to S. Miller and F. Alladina for typing the drafts.

REFERENCES

Anon. 1982. Record of strategies - fisheries management, Department of Fisheries and Oceans memorandum, Vancouver, 4p.

Dept. Fisheries and Oceans. MS 1956. Brief history by years covering salmon fishing activity, closures applied, and escapement and general remarks for 1956, Area 1, North Queen Charlottes (unpublished).

Dept. Fisheries and Oceans. MS 1960. Brief history by years covering salmon fishing activity, closures applied, and escapement and general remarks for 1960, Area 1, North Queen Charlottes (unpublished).

Dept. Fisheries and Oceans. 1983. 1983 Commercial Fishing Guide. ed. B. Austin, Vancouver, B.C. 112p.

Kadowaki, R. 1979. Queen Charlotte Islands Fisheries Advisory Committee meeting, November 29, 1979 (unpublished minutes).

Kadowaki, R. 1983. Skeena River Salmon Management Committee and Advisory Board meeting, July 28, 1983 (unpublished minutes).

Orman, L. 1983. Area 1 and 2W interception sockeye fisheries 1983, June 29, 1983 (unpublished memorandum).

Pearce, P.H. 1982. Turning the tide: a new policy for Canada's Pacific Fisheries. Commission on Pacific Fisheries Policy final report. Ottawa. 292p.

Riddell, B. 1983. Preliminary sockeye interception estimates from the 1982 Northern Tagging Study, April 20, 1983 (unpublished data).

Appendix 1. Salmon expectations and fishing plans, Area 1, north coast Queen Charlotte Islands, 1983.[a]

Species	Cycle year catch		Cycle year escapement		1983 Escapement Expected	1983 Escapement Optimum	Expectations
Sockeye	(1979)	74,300		21,000	25,000	55,000	No anticipated openings on local stocks. Commercial catch will be dependent on strength of passing stocks and subject to chinook interception levels.
	10 year average	59,700	10 year average	27,700			
Coho	(1980)	307,500		17,600	50,000	150,000	No directed net openings.
	10 year average	193,500	10 year average	57,000			
Pink	(1981)	517,500		3,700	8,000	30,000	Off year cycle. No directed openings.
	5 cycle average	196,300	5 cycle average	9,400			
Chum	(1979)	8,900		33,500	40,000	85,000	No anticipated openings.
	10 year average	20,400	10 year average	40,700			
Chinook	(1979)	64,900		500	1,000	5,000	No anticipated openings.
	10 year average	70,900	10 year average	900			

PROPOSED FISHING PATTERN

OBJECTIVE: To conserve local stocks. Net fishing times, intended to provide for local fisheries on passing stocks, will be restricted so as not to encourage accelerated interceptions and to maintain the chinook harvest at the 1960-1980 average of approximately 5,000.

EFFECTIVE DATE	ACTION
April 15 - UFN[b]	Sub-area 1-4 (Naden Harbour) and sub-area 1-6 (Masset Inlet and Sound) closed to all gear.
July 3- August 6	Open to net fishing 1 day per week. Extensions will be considered during peak abundances of passing sockeye and pink stocks.
August 7 - UFN	Abundance of local chum stocks will be monitored.

[a]Source: 1983 Pacific Region Commercial Fishing Guide.

[b]Until further notice.

Appendix 2. Salmon expectations and fishing plans, Area 2[1], west coast Queen Charlotte Islands, 1983.[a]

Species	Cycle year catch		Cycle year escapement	1983 Escapement Expected	1983 Escapement Optimum	Expectations
Pink						Off cycle year. No commercial openings.
Chum	(1979)			49,600	95,600	200,000	No anticipated openings. Several areas are not expected to reach escapement requirements. However, monitoring will continue to determine whether stock strength may permit a possible fall fishery.
	(1980)	47,100		89,700		
	5 year average	39,000	5 year average	61,000		

PROPOSED FISHING PATTERN

OBJECTIVE: To conserve local stocks. Net fishing times, intended to provide for local fisheries on passing stocks, will be restricted so as not to encourage accelerated interception and to limit the chinook harvest to approximately 5,000 as part of a reduction of recent years' accelerated catch.

EFFECTIVE DATE	ACTION
July 3-August 6	Open to net fishing 1 day per week in Rennell Sound and Kano Inlet only. Extensions will be considered during peak abundances of passing sockeye stocks.
OR	
July 17-August 6	Open to net fishing 2 days per week in Rennell Sound and Kano Inlet only. Abundance of local chum stocks will be monitored.

[a]Source: 1983 Pacific Region Commercial Fishing Guide.

Appendix 3. Salmon expectations and fishing plans, Area 2E, east coast Queen Charlotte Islands, 1983.[a]

Species	Cycle year catch		Cycle year escapement		1983 Escapement Expected	1983 Escapement Optimum	Expectations
Sockeye	(1978)	150		6,000	7,000	30,000	A below average return.
	(1979)			3,000			No commercial openings.
	10 year average	1,300	10 year average	9,200			
Coho	(1980)	5,900		24,700	40,000	Unknown	A below average return.
	10 year average	6,600	10 year average	43,400			No directed net fishery anticipated.
Pink							Off year for pinks. No commercial openings.
Chum	(1978)	115,200		210,150	75,000	400,000	The return of 4 year olds is expected to be well below average due to the very weak 1979 brood stock. No anticipated openings.
	(1979)			43,200			
	(1980)	118,000		160,600			
	10 year average	135,400	10 year average	154,600			

PROPOSED FISHING PATTERN

NOTE: There are no anticipated openings. The return of the predominant age 4 class chum is expected to be very weak due to the extremely light seeding in 1979. Returns of age 3 and age 5 are expected to be average. Also, chum returns to the Pallant Creek hatchery facility are expected to be light mainly due to the weak return in 1979.

[a]Source: 1983 Pacific Region Commercial Fishing Guide.